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Greensboro, N. C. 27411

Archives

F. D. Bluford Library

N. C. A & T State University

Greensboro, N. C. 27411



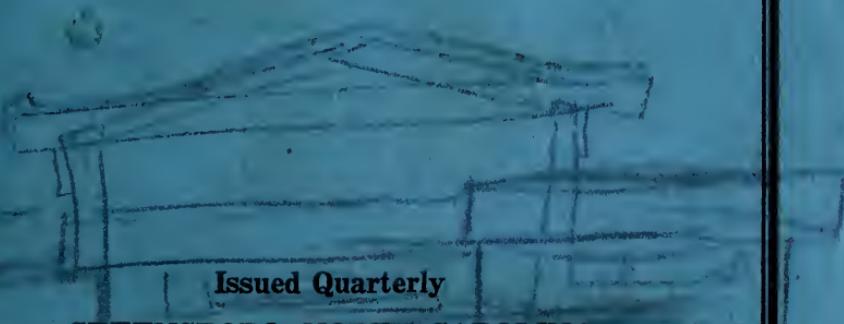
BULLETIN  
OF  
**A. & T. COLLEGE**

*Published by*

**THE AGRICULTURAL AND TECHNICAL  
COLLEGE OF NORTH CAROLINA**

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*Obedience to the Law is the Largest Liberty*



**Issued Quarterly**  
**GREENSBORO, NORTH CAROLINA**

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**CALENDAR 1953-1954**

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Entered as second-class matter, July 2nd, 1909, at the Post Office  
at Greensboro, N. C., under the act of July 16th, 1894.



Vol. 44

May, 1953

No. 2

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BULLETIN  
OF THE  
**Agricultural and Technical  
College**

OF NORTH CAROLINA  
(Co-Educational Institution)

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FIFTY-EIGHTH ANNUAL CATALOGUE  
1952-1953

Archives  
With Announcements for F. D. Bluford Library  
1953-1954 N. C. A & T State University  
Greensboro, N. C. 27411

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Recognized as A STANDARD "A" GRADE COLLEGE  
by the North Carolina Department of Education, the  
Council of Education of the State of Pennsylvania,  
the American Medical Association, the Southern  
Association of Colleges and Secondary Schools.

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GREENSBORO, NORTH CAROLINA

# 1953

JANUARY							APRIL							JULY							OCTOBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	F	S	
1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4	5	6	7	8	9	10	5	6	7	8	9	10	11	5	6	7	8	9	10	11	4	5	6	7	8	9	10
11	12	13	14	15	16	17	12	13	14	15	16	17	18	12	13	14	15	16	17	18	11	12	13	14	15	16	17
18	19	20	21	22	23	24	19	20	21	22	23	24	25	19	20	21	22	23	24	25	18	19	20	21	22	23	24
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22	23	24	25	26	27	28	24	25	26	27	28	29	30	24	25	26	27	28	29	30	22	23	24	25	26	27	28
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# 1954

JANUARY							APRIL							JULY							OCTOBER						
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FEBRUARY							MAY							AUGUST							NOVEMBER						
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21	22	23	24	25	26	27	21	22	23	24	25	26	27	22	23	24	25	26	27	28	21	22	23	24	25	26	27
28							23	24	25	26	27	28	29	31							28	29	30				
MARCH							JUNE							SEPTEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	F	S	
1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
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14	15	16	17	18	19	20	14	15	16	17	18	19	20	15	16	17	18	19	20	21	12	13	14	15	16	17	18
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28	29	30	31				27	28	29	30	31			26	27	28	29	30	31		26	27	28	29	30	31	

## **COLLEGE CALENDAR**

1953-1954

- September 11-12, 1953—Pre-Session Faculty Meetings  
September 13—Faculty Banquet  
September 14-15—Freshman Orientation and Medical Examination  
September 16—Freshman Registration  
September 17—Sophomore Registration  
September 18-19—Junior and Senior Registration  
September 21—Classes Begin. Late Registration Fee of \$1.00 per day also begins  
September 28—Last day for making changes in schedules  
December 16, 17, 18 and 21—Fall Quarter Examinations  
January 4, 1954—Registration of Freshmen  
January 5—Registration of Upperclassmen  
January 6—Classes Begin. Late Registration Fee of \$1.00 per day also begins  
January 13—Last day for making changes in schedules  
March 15, 16, 17, 18—Winter Quarter Examinations  
March 22—Registration of Freshmen  
March 23—Registration of Upperclassmen  
March 24—Classes Begin. Late Registration Fee of \$1.00 per day also begins  
March 31—Last day for making changes in schedules  
May 24, 25, 26, 27—Spring Quarter Examinations  
May 29—Senior Class Day  
May 30—Baccalaureate  
May 31—Commencement

## HOLIDAYS

- Thanksgiving—November 26, 1953  
Christmas Holidays—December 22, 1953-January 4, 1954  
Easter Holiday—April 19, 1954

## SPECIAL DAYS

## COLLEGE PUBLICATIONS

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*The Bulletin of the A. and T. College* published annually as the official catalogue of the College.

*The Bulletin of the A. and T. College Summer Session*, published annually as the official catalogue of the Summer School.

*The Bulletin of the Graduate Division* of the A. and T. College, published annually.

*Annual Pictorial Issue* of the Bulletin.

*The A. and T. College Student Handbook*, published biennially for general information and guidance of the students.

*The Register*, the official organ of the student body, published monthly. Edited and managed by the student body under the supervision of the College staff.

*Bulletin* of the A. and T. College, Non-Collegiate Trade, Vocational and Special Courses.

*Alumni Newsletter*, published quarterly.

*Ayantee*, Year Book of the Senior Class.

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**BOARD OF TRUSTEES**  
**THE**  
**AGRICULTURAL AND TECHNICAL COLLEGE**

---

J. WILSON ALEXANDER .....	Huntersville, N. C.
GEORGE T. ASHFORD .....	Red Springs, N. C.
CHARLES F. CARROLL .....	Raleigh, N. C.
SHELLEY B. CAVINESS .....	Greensboro, N. C.
MURRAY DAVIS .....	High Point, N. C.
C. H. DEARMON .....	Statesville, N. C.
ROBERT H. FRAZIER .....	Greensboro, N. C.
C. A. HINES .....	Greensboro, N. C.
L. W. JAMES .....	Ahoskie, N. C.
J. W. JEFFRIES .....	Mebane, N. C.
E. R. MERRICK .....	Durham, N. C.
W. L. T. MILLER .....	Greensboro, N. C.
A. A. MORRISEY .....	Winston-Salem, N. C.
WADE H. PASCHAL .....	Siler City, N. C.
H. A. SCOTT .....	Haw River, N. C.
GEORGE SOCKWELL .....	Elon College, N. C.

**OFFICERS  
ADMINISTRATION AND INSTRUCTION**  
**THE  
AGRICULTURAL AND TECHNICAL COLLEGE**

---

**Officers of Administration**

FERDINAND D. BLUFORD, A.B., B.Ped., D.Ped.	President
ELLIS F. CORBETT, B.S.	Director of Public Relations
C. R. A. CUNNINGHAM, B.S., M.S.	Registrar
F. E. DAVIS, B.S., M.D.	College Physician
WILLIAM H. GAMBLE, B.S.	Dean of Men
WARMOTH T. GIBBS, A.B., Ed.M.	Dean, School of Education and Science
E. RAY HODGIN	Secretary-Treasurer
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JERALD M. MARTEENA, B.M.E., M.S.	Dean, School of Engineering
CLEO M. MCCOY, B.A., B.D.	Director of Religious Activities
ALMA I. MORROW, A.B., B.S. in Lib. Sc., M.S. in Lib. Sc.	Librarian
WILLIAM E. REED, B.S., M.S., Ph.D.	Dean, School of Agriculture
SIDNEY B. SIMMONS, B.S.A.	Director, Vocational Agriculture
SAMUEL C. SMITH, B.S., M.S.	Dean, Technical Institute
JEAN W. SPINNER, A.B., M.A.	Dean of Women
NATHANIEL C. WEBSTER	Bursar
FREDERICK ALLEN WILLIAMS, B.S., M.A., Ph.D.	Dean, Graduate School

**Associates and Assistants of Administration**

FRANCES A. ADAMS, B.S.	Secretary to Dean, School of Engineering
EDNA LORRAINE ADKINS, B.S.	Secretary, Dean of Women
LONA SHERDEAN ALLEN, B.S.	Secretary to the Registrar
BLANCHE AYNER, B.S.	Recorder, Registrar's Office
ROSEBUD APPLEBY, R.N.	College Nurse
CATHERINE DERR BANKS, B.S.	Secretary to College Guidance Center
GENEVA CRAWFORD BULLOCK, B.S.	Assistant in Charge of Admissions
JESSIE M. COLLINS, B.S.	Secretary to Teacher Trainer
THELMA COLMAN, B.A.	Dietitian
MARGARET L. CORBETT, B.S.	House Directress
DORIS GWENDOLYN DEAN, B.S.	Stenographer, Treasurer's Office
CHARLES C. DEAN, B.S., B.L.S., M.A.	Reference Librarian
MARY L. DOGGETT, B.S.	Secretary to Director, Vocational Agriculture
VIRGINIA DURHAM, B.S.	Secretary to the President
BERNICE M. EDWARDS	Secretary to the Secretary-Treasurer

EFFIE J. ELLIOT, B.S.	<i>Stenographer-Typist, Registrar's Office</i>
W. J. FISHER, B.S.	<i>Secretary to State N.F.A.</i>
MARTHA C. RUE GARDNER, B.S.	<i>Secretary to Dean of the Technical Institute</i>
JAMES E. GARFIELD	<i>Assistant Manager Bookstore</i>
ALLISON GORDON, B.S.	<i>College Postman</i>
SARAH CHARLEAN HANNAR, B.S.	<i>Assistant Dean of Women</i>
CARRIE W. HARPER, B.S.	<i>Secretary to the Bursar</i>
MARJORIE HOLMES, B.S.	<i>Secretary, Dean of Men's Office</i>
INEZ HIGGINS, Diploma	<i>Assistant Dean of Women</i>
MARTIN F. HOLT	<i>Superintendent of Farms</i>
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CHARLES A. HINSON, B.S.	<i>Custodian College Dining Hall</i>
GLADYS MABEL HORNE, B.S.	<i>Stenographer, Treasurer's Office</i>
JUANITA M. JORDAN, B.S.	<i>Stenographer, School of Education and Science</i>
EDITH DANA LEE, B.S.	<i>Assistant Dean of Women</i>
HYBERNIA MCADOO, B.S.	<i>Secretary, Bursar's Office</i>
ANNIE R. MASSEY, B.S.	<i>Assistant Registrar</i>
GLORIA JEAN MCCOLLUM, B.S.	<i>Recorder, Registrar's Office</i>
MABEL M. MCCOY, A.B., M.A., B.L.S.	<i>Catalogue in Library</i>
WALTER McLARTY, B.S.	<i>Assistant Dean of Men</i>
DAISY B. MEACHEM, B.S.	<i>Circulation Librarian</i>
T. E. NEAL	<i>Superintendent of Power Plant</i>
MYRTLE LITTLEJOHN NESBITT, B.S.	<i>Assistant Dean of Women</i>
LORRAINE BERNICE STITH, B.S.	<i>Assistant Dietitian</i>
DOROTHY SMITH, B.S.	<i>Secretary to Librarian</i>
ANN D. STEELE, B.S.	<i>Stenographer-Typist, Registrar's Office</i>
SARAH E. TURK, B.S.	<i>Assistant Director of Nursery School</i>
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THELMA FAIRFAX PEARSALL, B.S., B.S.L.S.	<i>Periodical Librarian</i>
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JOSEPHINE C. POPE, B.S.	<i>Secretary to Dean of School of Agriculture</i>
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L. OPHELIA SAUNDERS, B.S.	<i>Secretary to Army R.O.T.C.</i>
BERTHA H. SMITH, B.S.	<i>Secretary, Alumni Association</i>
ALLIE THOMPSON	<i>Secretary, Graduate School</i>
MARY L. THOMPSON, B.S.	<i>Documents Librarian</i>
RUBY E. D. M. TROXLER, B.S.	<i>Secretary, Treasurer's Office</i>
CATHERINE TRUESDALE	<i>Secretary, Physical Education Dept.</i>
EDWARD WADDELL, B.S.	<i>Supt. of Buildings and Grounds</i>
THELMA WADDELL, B.S., R.N., M.T.	<i>College Nurse</i>
LUCILLE HOLCOMBE WEBB, B.S.	<i>Secretary to Dean, School of Education and Science</i>
LUCYNDA STEWARD WHITE, R.N., C.P.H.N.	<i>College Nurse</i>

### Officers of Air Force Administration

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JAMES P. GROSS, Jr., Major.....	Assistant PAS&T
THEODORE A. WILSON, Major .....	Assistant PAS&T
JACK D. HOLSLAW, Captain.....	Assistant PAS&T
WALTER R. HARLEY, Captain .....	Assistant PAS&T
MANNIE M. WATKINS, First Lieutenant .....	Assistant PAS&T
IVEY J. BOWEN, Master Sergeant.....	Training NCO
FRANKLIN M. BROWN, Master Sergeant.....	Sergeant Major
NELSON L. BARNETT, JR., Technical Sergeant .....	Supply Technician
BENJAMIN F. KORNEGAY, Technical Sergeant .....	Instructor
COPELAND E. HUTSON, Staff Sergeant .....	Assistant Training NCO

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ROY W. SORRELL, Major, Infantry .....	PMS&T
THOMAS H. WRIGHT, Major, Infantry .....	Assistant PMS&T
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HAROLD A. JENKINS, Captain, Infantry .....	Assistant PMS&T
OLIVER W. DILLARD, Captain, Infantry .....	Assistant PMS&T
MILTON E. DODSON, CWO, USA .....	Adjutant
SILAS CHRISTIAN, Master Sergeant .....	Sergeant Major
CLEOPHUS HOGAN, Master Sergeant .....	Assistant Instructor
JOSEPH COLQUITT, Master Sergeant .....	Assistant Instructor
ROBERT O. WATKINS, Master Sergeant .....	Assistant Instructor
DAVID VANN, SFC. .....	Assistant Instructor
HOWARD J. MAXWELL, SFC .....	Assistant Instructor

### Officers of Instruction

#### PROFESSORS

FERDINAND D. BLUFORD .....	A. and T. College President of the College
----------------------------	---

A.B., Virginia Union University; B.Ped., Howard University; Graduate work, Columbia University; D.Ped., Virginia Union University, Dean Agricultural and Mechanical College of Alabama; Professor of Education, Kentucky State College; Professor of English, St. Paul Normal and Industrial School; Professor of English, A. and T. College; Dean, A. and T. College; Present position since 1925.

LITTLETON ALEXANDER ALSTON.....	1910 Albany Street English
---------------------------------	-------------------------------

B.A., Virginia State College; M.A., *ibid.*; M.A., Columbia University; Professional Diploma in Teaching English, Ed.D., *ibid.*, Former positions: Principal Elementary School, Stony Creek, Va.; Instructor of English, Sussex County Training School, Waverly, Va. Present position since 1946.

WILLIAM M. BELL.....	College Campus Coach-Director of Physical Education
----------------------	--

B.A., Ohio State University; M.A., Ohio State University, Assistant C. Howard University; Director of Athletics and Head Coach, Chaffin College; Director of Physical Education and Head Coach, Florida A. and M. College; Setststant Director of Physical Training and Coach, Tuskegee Army Air Field; Present position since 1945.

## THE AGRICULTURAL AND TECHNICAL COLLEGE

- LEADIE M. CLARK.....131 North Dudley Street  
*English*  
 B.A., University of Illinois; M.A., University of Illinois; Ph.D., University of Illinois. Present position since 1945.
- CAROLYN E. CRAWFORD.....949 East Washington Street  
*Home Economics*  
 B.S., Columbia University; M.A., *ibid.*, Further study, Columbia University. Former position, Instructor Prairie View State College. Present position since 1938.
- CLARA V. EVANS.....2019 East Market Street  
*Home Economics*  
 B.S., West Virginia State College; M.A., Columbia University. Former positions: Kelley Miller High School; Paine College; North Carolina College. Present position since 1950.
- WARMOTH T. GIBBS.....420 N. Dudley Street  
*Dean, School of Education and Science-Professor of Political Science*  
 A.B., Harvard University; Ed.M., *ibid.*; Completed one year and a half beyond the Master's Degree, *ibid.*; Professor of History; Dean, School of Education and Sciences. Present position since 1929.
- ARTIS P. GRAVES.....A. and T. College  
*Biology*  
 B.S., Bluefield State College; M.S., University of Iowa; Ph.D., *ibid.* Former positions: Science Instructor and Head Coach, Morristown College; Science Instructor and Head Coach Shorter College. Science Instructor and Assistant Coach, Morris-Brown College; Chairman, Division of Science and Mathematics, Director of Science Workshop, Southern University. Present position since 1950.
- GEORGE VANCE GUY.....1312 Salem Street  
*Education*  
 Attended Wilberforce University, Indiana University; B.A., University of Illinois, M.A., University of Illinois. Requirements completed for the Ph.D. degree. Former positions: University of Illinois; Graduate Assistant; Instructor. Present position since 1951.
- ARTHUR F. JACKSON.....A. and T. College  
*Guidance*  
 B.S., Hampton Institute; M.A., Ed.D., Teachers College, Columbia University. Former positions: Teacher of Mathematics and Physical Education at Christiansburg Institute, Cambria, Va.; Director of Guidance, Wm. C. Jason High School, Georgetown, Del. Present position since 1952.
- ELMORE KENNEDY, Major.....A. and T. College  
*Air Science and Tactics*  
 B.S., Wilberforce University; University of Alaska. Present position since 1951.
- WADARAN L. KENNEDY.....2317 E. Market Street  
*Dairy Husbandry*  
 B.S., University of Illinois; M.S., *ibid.*; Ph.D., Pennsylvania State College; Professor of Animal Husbandry, Virginia State College; Assistant Professor of Animal Husbandry, Langston University; Graduate Scholar in Dairy Husbandry, The Pennsylvania State College. Present position since 1936.
- JERALD M. MARTEENA.....1900 Gorrell Street  
*Dean, School of Engineering and Professor of Mechanical Engineering*  
 B.M.E., Ohio State University; M.S., University of Michigan; Completed one year and one summer beyond Master's Degree, University of Michigan; Professor of Mathematics, A. and T. College. Present position since 1938.
- ISAAC H. STELLER, JR.....A. and T. College  
*Biochemistry*  
 B.S., Liv. on College; M.S., University of Wisconsin; Ph.D., *ibid.* Present position since 1950.

JOHN C. MC LAUGHLIN.....	910 Benbow Road <i>Agricultural Economics and Rural Sociology</i>
B.S.A., A. and T. College; M.S., Cornell University, 1932. Former position: Alcorn A. and M. College. Present position since 1937.	
HOWARD T. PEARSALL.....	1112 Duke Street <i>Music</i>
B.A., Fisk University; M.A., Western Reserve. Former positions: A. and M. College, Normal, Alabama; Cleveland, Ohio Public Schools; Storer College, Harper's Ferry, West Virginia; Tougaloo College, Tougaloo, Mississippi. Present position since 1950.	
WILLIAM E. REED.....	A. and T. College <i>Dean, School of Agriculture and Professor of Soils</i>
B.S., Southern University; M.S., Iowa State College; Ph.D., Cornell University. Present position since 1949.	
WAVERLY NATHANIEL RICE, JR.....	1504 Gorrell Street <i>French</i>
A.B., Morehouse College; Diplome pour L'enseignement du français a L'tranger, University of Toulouse, France; docteur de L'Universite de Toulouse. (Letters); University of Mexico, Summer. Present position since 1937.	
LEONARD H. ROBINSON.....	607 Julian Street <i>Sociology</i>
B.S., Wilberforce University; M.A., Atlanta University; Ph.D., Ohio State University. Former positions: Morehouse College, Elizabeth City State Teachers College, Lincoln High School, Fort Smith, Arkansas and Fayetteville State Teachers College. Present position since 1951.	
RANDA DAVENPORT RUSSELL.....	A. and T. College <i>Physical Education</i>
A.B., Kentucky State College; M.A., Ed.D., University of Michigan. Former positions; Kentucky Public Schools, Virginia State College, Spelman College. Present position since 1952.	
CHARLES W. SIMMONS.....	1510 Lindsay Street <i>History</i>
B.S., Alcorn A. and M. College; M.S., Ph.D., University of Illinois. Former positions: Registrar, Alcorn College; Instructor, Southern University; Associate Professor of History, Bluefield State College. Present position since 1952.	
ROY W. SORRELL, Major, Infantry.....	A and T. College <i>Military Science and Tactics</i>
A.B., Howard University. Former positions: Army Officer since 1941, 366th Infantry Regiment. Present position since 1951.	
JAMES A. STEVENS.....	A and T. College <i>Physical Education</i>
B.S., Kansas State Teachers College; M.S., University of Southern California. Former positions: Bishop College, Marshall, Texas; Prairie View Texas. Present position since 1952.	
CALVIN R. STEVENSON.....	1606 East Market Street <i>Psychology and Guidance</i>
B.S., Teachers College, Columbia University; M.S., <i>ibid.</i> ; Former positions, Elementary Teacher, Baltimore, Maryland. Technical Instructor, U. S. Army, Ass't. Detach. Comd. Med. Dept. U. S. Army. Present position since 1948.	
WILLIAM A. STREAT, JR.....	1009 Ross Avenue <i>Architecture</i>
B.S., Hampton Institute; B.S., University of Illinois; S.M., Massachusetts Institute of Technology. Registered Architect of North Carolina. Former position: U.S. Engineers, Cheyenne, Wyoming. Present position since 1949.	

FREDRICK ALLEN WILLIAMS.....1013 Lindsay Street  
 B.S., A. and T. College; M.A., Michigan State; Ph.D., University of Wisconsin.  
 Former positions: Henderson Institute; A. and T. College, Southern University.  
 Present position since 1950.

BOOKER TALIAFERRO WHITE.....1602 Lindsay Street  
*Chemistry*

B.S., West Virginia State College; M.S., Ohio State University, Ph.D., Ohio State University. Former positions: Kitrell College; Coxe High School, Greenriver, N. C.; Brewer Jr. College, Greenwood, S. C.; Halifax County Training School, Weldon, N. C.; Principal Morristown College; State A. & M., Normal, Ala. Present position since 1947.

### ASSOCIATE PROFESSORS

WILLIAM E. ALEXANDER.....2601 East Market Street  
*Animal and Dairy Husbandry*

B.S., Hampton Institute, M.S., University of Wisconsin. Former positions: Tuskegee Institute, U.S.D.A. Bureau of Animal Industry. Present position since 1949.

WILLIAM M. BANKS.....A. and T. College  
*Biology*

A.B., State University of Iowa; M.A., Ohio State University. Present position since 1952.

THOMAS ARTHUR CLARK.....2601 East Market Street  
*Social Studies*

B.S., City College of New York; M.S. in Education, *ibid.*; M.A., Columbia University; Recreation Director/Bureau of Recreation Department of Parks, New York City; Marine Captain in International Transportation, Erie Railroad. Present position since 1945.

C. R. A. CUNNINGHAM.....1110 East Market Street  
*Registrar and Associate Professor of Biology*

B.S., University of Illinois; M.S., *ibid.*; Instructor, Tennessee State College; Georgia Normal and Agricultural College. Present position since 1934.

GERARD E. GRAY.....2110 McConnell Road  
*Architectural Engineering*

B.S., A. and T. College; M.S., University of Illinois. Present position since 1950.

CLARENCE E. DEAN.....Sedalia  
*Agricultural Education*

B.S., Hampton Institute, M.S., Iowa State College; Berry O'Kelly Training School. Present position since 1930.

CARRYE HILL KELLEY.....A. and T. College  
*English*

B.S., A. and T. College; M.A. in History, University of Pennsylvania; M.A. in English, New York University. Present position since 1939.

JOHN B. MURPHY.....1016 Ross Avenue  
*Agronomy*

B.S., Prairie View College; M.S., Kansas State College. Instructor in Rural War Training, Prairie View College and at Nacogdoches, Texas; Teacher, Vocational Agriculture, Yoakum, Texas; County Agricultural Agent, Bellville, Austin County, Texas. Present position since 1946.

RAYMOND RODERICK PALMER.....803 Julian Street  
*English*

A.B., Wiley College; A.M., Washington University; Ed.M., University of Maryland. Former positions: English Instructor, St. Louis Public Schools; Maryland State College; Washington, D. C. Public Schools. Present position since 1952.

JAMES PENDERGRAST.....	2601 East Market Street <i>Chemistry</i>
B.S., A. and T. College; M.S., Howard University. Further study: University of Minnesota. Former position: Southern University. Present position since 1945.	
BERT C. PIGGOTT.....	1007 Lindsay Street <i>Physical Education</i>
B.S., University of Illinois; M.S., <i>ibid.</i> Present position since 1948.	
ARMAND RICHARDSON.....	321 Bennett Street <i>Electrical Engineering</i>
B.S., University of Pittsburgh. M.S. <i>ibid.</i> Present position since 1947.	
H. CLINTON TAYLOR.....	2601 East Market Street <i>Fine Arts</i>
B.F.A., Syracuse University; M.A., Columbia University; Further Graduate study, Columbia University. Present position since 1927.	
ARTHUR SYLVESTER TOTTEN.....	A. and T. College Farm <i>Poultry</i>
B.S., West Virginia State College; M.S., Michigan State College. Instructor poultry two years, Princess Ann College; Instructor, Southern University one year. Present position since 1946.	
LLEWALLYN ADDISON WISE.....	422 N. Dudley Street <i>Business</i>
B.S.C., New York University; M.A., Atlanta University. Present position since 1928.	
RALPH L. WOODEN.....	432 N. Dudley Street <i>Visual Aids Education</i>
B.S., A. and T. College; Professional Teaching Diploma, Specialist School, U. S. Army Air Forces Technical Training School; M.A., Ohio State University; Graduate work toward Ph.D., <i>ibid.</i> Former positions: Instructor, North Street High School, Hagerstown, Md.; Dudley High School, Greensboro, N. C.; U. S. Army Ground School Instructor, Chanute Field, Illinois, Seymour-Johnson Field, N. C., Rome Army Air Field, New York, U. S. Army. Present position since 1947.	
JOHN LOVELLE WITHERS.....	High Point, N. C. <i>Economics</i>
B.S., A. and T. College; M.A., Economics, University of Wisconsin; M.A., Political Science, University of Chicago. Present position since 1947.	

**ASSISTANT PROFESSORS**

W. A. BLOUNT.....	721 N. Cameron Ave., Winston-Salem, N. C. <i>Education</i>
B.S., A. and T. College; M.S., The Penn. State College. Former positions: Teacher Vocational Agriculture Westminster, Cooksville, Md.; Assistant State Supervisor I.O.F. Present position since 1951.	
PEARL G. BRADLEY.....	1425 E. Market Street <i>Speech</i>
B.S., A. and T. College; M.A., University of Michigan; Instructor of English, J. B. Dudley High School. Present position since 1945.	
TALMADGE BREWER.....	2317 East Market Street <i>Animal Husbandry</i>
B.S., Prairie View College; M.S., Michigan State College. Present position since 1948.	

WALTER FERDINAND CARLSON, JR.....	A. and T. College <i>Band-Instrumental Music Education</i>
B.S., A. and T. College; M.M., University of Michigan. Former positions. Director of Music, Palmer Memorial Institute; Director of Bands, A. and T. College since 1946.	
SYLVESTER L. CLARKE.....	2601 East Market Street <i>English</i>
A.B., Shaw University; M.S., Cornell University. Former positions: Instructor in the Beaufort County System. Present position since 1950.	
ANN LAMB DAVIS.....	1103 Benbow Road <i>Clothing</i>
B.S., A. and T. College; A.M., Columbia University. Former positions: Clothing Instructor, Dudley High School, Greensboro, N. C.; North Carolina College, Durham, N. C. Present position since 1949.	
JAMES F. DAWKINS.....	A. and T. College <i>Industrial Education</i>
B.S., A. and T. College; M.S., University of Pennsylvania.	
GWENDOLYN T. DICKSON.....	A. and T. College <i>Commercial Education</i>
B.A., Samuel Huston College; M.C.S., Boston University. Further study at the University of Southern California. Former position: Secretary to President, Samuel Huston College, Bursar-Business Manager, Samuel Huston College, Instructor of Commercial Education, St. Phillip's Jr. College. Present position since 1946.	
GEORGE C. GAIL.....	2601 East Market Street <i>Industrial Arts</i>
B.S., A. and T. College; M.A., University of Minnesota. Present position since 1949.	
JAMES P. GOSS, JR., Major.....	A. and T. College <i>Air Science</i>
B.S., Boston University; M.S., Boston University; Further Study at Harvard University. Former positions: Director of Lexington Boys' Club, Lexington, Massachusetts. Present position since 1951.	
RUDOLPH GRANDY.....	A. and T. College <i>Biological Sciences</i>
B.S., A. and T. College; Cornell University, further study; Instructor in Horticulture, Southern University, Scotlandville, La. Present position since 1942.	
WALTER RAY HARLEY, 1st Lt.....	A. and T. College <i>Air Science and Tactics</i>
B.S., Morehouse College. Former positions: Science Teacher at Bell Street High School, Clinton, South Carolina. Present position since 1951.	
LEROY F. HARRIS.....	1007 Lindsay Street <i>Sociology</i>
B.A., Morehouse College; M.S.S.W., University of Wisconsin. Former positions: Leland College, Tougaloo College, Southern University, Alcorn College. Present position since 1949.	
JACK D. HOLSCLAWS, Captain.....	A. and T. College <i>Air Science and Tactics</i>
D.C., Western States of Chiropractics. Present position since 1952.	
LEROY F. HOLMES, JR.....	A. and T. College <i>Fine Arts</i>
B.A., Howard University; M.A., Harvard University. Former positions: Teacher of Public School Art, Arlington, Virginia; Instructor of Fine Arts, Florida A. and M. College. Present position since 1952.	

CHARLES L. HAYES.....	1003 Duke Street <i>Education</i>
A.B., Leland College; Ed.M., Loyola University. Former positions: Assistant to Registrar, Leland College. Elementary School Teacher, Chicago Public School System. Present position since 1949.	
HAROLD A. JENKINS, Capt. Inf.....	A. and T. College <i>Military Science and Tactics</i>
B.S., Wilberforce University. Present position since 1951.	
HARDY LISTON, JR.....	330 West Bragg Street <i>Mechanical Engineering</i>
Knoxville College; B.S. in M.E., Howard University; Assistant Ordnance Engineer, Navy Department, Washington, D. C. Present position since 1946.	
MAXINE MCBRIER.....	A. and T. College <i>Foreign Languages</i>
B.A., Kansas University; M.A., <i>ibid</i> . Further study at the University of Minnesota, National University of Mexico. Former position: Prairie View A. and M. College, Prairie View, Texas. Present position since 1952.	
CLEO MILAN MCCOY.....	115 Obermeyer Street <i>Religious Education</i>
B.A., Paine College; B.D., School of Religion, Howard University; Interne Chaplain, National Training School for Boys, Washington, D. C.; Qualifications Examiner, United States Civil Service Commission, Washington, D. C.; Personal Technician, Treasury Department, Bureau of the Public Debt, New York Regional Office, New York City. Present position since 1946.	
AARON CARROLL MADRY.....	923 Sevier Street <i>Horticulture</i>
B.S., Ohio State University; M.S., <i>ibid</i> . Present position since 1952.	
NAN PHELPS MANUEL .....	A. and T. College <i>Mathematics</i>
B.S., Morgan State College; M.S., Howard University. Further study: New York University. Present position since 1950.	
PERCY MCWAIN.....	2601 East Market Street <i>Chemistry</i>
A.B., Ohio State University; M.A., <i>ibid</i> . Former position: Atmospheric Nitrogen Corp., Ironton, Ohio; Research Assistant, Ohio State University Research Foundation. Present position since 1948.	
DORSEY L. MORGAN.....	200 Raleigh Street <i>Physics</i>
B.S., Howard University; M.S., University of Chicago. Former positions: Assistant Physicist, Ft Monmouth, N. J. for U. S. War Department; Instructor in Physics, Southern University, Baton Rouge, La. Present position since 1949.	
ALMA I. MORROW.....	1001 Lindsay Street <i>Librarian</i>
B.S. in Library Science, Hampton Institute; A.B., Howard University; M.S. in Library Science, Columbia University. Present position since 1936.	
LOUISE M. E. NIXON.....	409 N. Dudley Street <i>Mathematics</i>
B.S., A. and T. College; M.A., New York University, School of Education. Former positions: Willis Hare High School, Pendleton, N. C., Mathematics and Science Teacher; Mathematics Instructor, J. B. Dudley High School, Greensboro, N. C.; Mathematics Instructor, A. and T. College. Present position since 1947.	

KATRINA M. PORCHER.....	1606 Lindsay Street <i>Home Economics</i>
B.S., Hampton Institute; Montclair, N. J. State Teachers College, summer; M.A., Columbia University. Former positions: Holloway High School, Murfreesboro, Tenn., Williston Industrial School, Wilmington, N. C. Present position since 1947.	
CHARLES M. POWELL.....	2601 East Market Street <i>Industrial Education</i>
B.S., A. and T. College; M.A., New York University. Former positions: Instructor of Industrial Arts at Whiteville High School, Statistician at Harlem Y.M.C.A., New York; U. S. Army Section Construction Foreman. Present position since 1948.	
GLEN F. RANKIN.....	803 Julian Street <i>Agricultural Education</i>
B.S., A. and T. College; M.S., Pennsylvania State College. Former positions: Teacher of Vocational Agriculture Aggrey Memorial High School, Rowan County; Assistant Supervisor of the Veterans Farmer Training Program. Present position since 1950.	
JOHN C. ROBINSON, Major.....	A. and T. College <i>Military Science</i>
B.S., Howard University. Present position since 1951.	
GEORGE C. ROYAL, JR.....	A. and T. College <i>Bacteriology</i>
B.S., Tuskegee Institute; M.S., University of Wisconsin. Former positions: Instructor of Bacteriology, Tuskegee Institute; Research Assistant, Ohio Agriculture Experiment Station. Present position since 1952.	
*WILLIAM T. RICHIE.....	A. and T. College <i>Poultry Husbandry</i>
B.S.A., Georgia State College; M.S., Ohio State University. Former position: Teacher of Poultry Husbandry, West Virginia State College. Present position since 1949.	
BOOKER TALLIFERRO SIMPSON.....	716 East Bragg Street <i>Chemistry</i>
B.S., Claflin College; M.S., State University of Iowa. Former positions: Teacher of Chemistry and Mathematics, High School, Anderson, South Carolina; Teacher of Chemistry and Mathematics, Lancaster, South Carolina; Teacher of Mathematics, Hampton, Virginia (High School). Present position since 1948.	
WILLIAM SPIGENER.....	2601 E. Market Street <i>Zoology</i>
B.S., Lincoln University; M.S., Catholic University of America. Statistician, War Department. Present position since 1946.	
MANNIE M. WATKINS, 1st Lt. ....	A. and T. College <i>Air Science and Tactics</i>
B.S., Virginia State College; M.S., Virginia State College. Former position: East Suffolk High School. Present position since 1952.	
THEODORE A. WILSON, Major.....	A. and T. College <i>Military Science</i>
Virginia Union University.	
*HOWARD C. WILLIAMS.....	A. and T. College <i>Agricultural Economics</i>
B.S.A., Georgia State College; M.S., Ohio State University. Present position since 1947.	

\*Absent for further study—1952-1953.

THOMAS H. WRIGHT, Major Infantry.....	A. and T. College <i>Military Science and Tactics</i>
B.S. Education, Wilberforce University.	Present position since 1949.
CHARLES RUSSELL WYRICK.....	1515 East Market Street <i>English</i>
B.S., A. and T. College; M.A., New York University.	Former position: Instructor Ammunition School, Aberdeen, Maryland. Present position since 1948.

## INSTRUCTORS

HARVEY R. ALEXANDER.....	1006 Ross Avenue <i>Accounting</i>
B.S., University of Illinois; M.S., Duquesne University.	Former position: Instructor of Accounting, Southern University, Baton Rouge, Louisiana. Present position since 1950.
MELVIN T. ALEXANDER.....	817 Duke Street <i>Radio and Television</i>
B.S., A. and T. College. Former positions: Head Radio Service Department, Western Auto Supply Co.; Checker of Electronic Equipment, Sun Ship Yard.	Present position since 1951.
ISAAC BARNETT.....	A. and T. College <i>Automobile Mechanics</i>
B.S., A. and T. College; further study, General Motors Technical Institute.	Former position: Instructor, Wm. Penn High School, 1946. Present position since 1947.
LEWIS E. BARBEE.....	A. and T. College <i>Agronomy</i>
B.S., Virginia State College; M.S., Purdue University.	Present position since 1950.
B.S., Hampton Institute.	Present position since 1951.
HARRIETTE LEE BELL.....	A. and T. College <i>English</i>
B.S., Miner Teachers College; Further study, Ohio State University.	Former positions: Instructor, Florida A. and M. College; Teacher, Washington, D. C. Public Schools. Present position since 1950.
BETTY J. BOBO.....	443 North Dudley Street <i>English</i>
B.S., University of Wisconsin; M.A., <i>ibid.</i>	Present position since 1952.
MACEO THADDEUS BOWIE.....	425 Bennett Street <i>English</i>
A.B. Tillotson College; M.A., Wisconsin University.	Former Positions: Stillman College, Wendell Phillips High School. Present position since 1952.
JEAN MARIE BRIGHT.....	1008 Benbow Road <i>English</i>
B.S., A. and T. College; Further Study, Columbia University.	Former positions: High School Teacher of English, Trenton and Hillsboro, N. C.; American Red Cross Staff Assistant, Philippines and Japan; Educational Research Worker, New York City. Present position since 1951.
JAMES ALEXANDER BROADY, JR.....	A. and T. College <i>Art</i>
B.S. in Secondary Education, Bluefield State College; B.S. in Elementary Education, <i>ibid.</i> ; M.A., Columbia University; Further Study, <i>ibid.</i>	Former positions: Public Schools of West Virginia; Shaw University, Raleigh, North Carolina. Present position since 1952.

MATTHEW BROWN.....	A. and T. College <i>Physical Education</i> Ohio State University. Present position since 1948.
NATHAN E. BROWN.....	815 English Street <i>Carpentry</i> B.S., A. and T. College. High School Vocational teacher for six years. Present position since 1947.
JOHN H. BUNCH.....	A. and T. College <i>Chemistry</i> B.S. Hampton Institute.
G. L. BURGE.....	1719 McConnell Road <i>Bricklaying</i>
C. L. CANNON.....	1402 McCornell Street <i>Laundry Management</i> B.S., Alcorn A. & M. College. Present position since 1946.
ETHBERT S. CARR.....	2601 East Market Street <i>Agricultural Engineering</i> Hampton Institute: B.S. in Agriculture, Ohio State; further study at Cornell University. Former position: Instructor at Prairie View State College. Present position since 1945.
IRENE E. CARTWRIGHT.....	A. and T. College <i>Commercial Education</i> B.S., Hampton Institute; M.A., New York University. Former positions: American Business School, Tulsa, Oklahoma; St. Augustine's College, Raleigh, N. C. Present position since 1952.
CYNTHIA C. CHIVERS.....	2601 East Market Street <i>Physical Education</i> B.S., Hampton Institute M.A., New York University. Former position: Instructor at Texas College, Tyler, Texas. Present position since 1952.
MARQUIS L. COUSINS.....	149 Beech Street <i>Automobile Mechanics</i> Certificate of Auto Mechanics, A. and T. College. Instructor of auto. mech. in U. S. Army for two years. One year at General Motors School, Detroit, Mich. Present position since 1947.
CHARLES C. DAVIS.....	A. and T. College <i>Mathematics</i> B.S.-E.E., Howard University. Present position since 1946.
CLYDE DEHUGULEY.....	731 Pearson Street <i>Shoe Repairing, Leather Works</i> Graduate Tuskegee Institute; Instructor in shoe repairing, Kentucky State College. Present position since 1924
WILLIAM J. DECATUR.....	A. and T. College <i>Assistant Dean of Men and Instructor of Psychology</i> B.A., Wilberforce University; M.A., Teachers College, Columbia University. Present position since 1952.
LEWIS C. DOWDY.....	403 North Dudley Street <i>Education</i> A.B., Allen University; M.A., Indiana State Teachers College. Former positions: Supervising Principal of Winnsboro High School, Winnsboro, South Carolina. Present position since 1951.

LEROY EVERETT.....	A. and T. College <i>Assistant Dean of Men and Instructor of Education</i> B.S., Kansas State Teachers College; M.S., <i>ibid.</i> Further study at Humboldt, Berlin, Germany. Present position since 1952.
MARY ELLEN FICKLING.....	Campus <i>Physical Education</i> B.S., Fisk University; M.A., Columbia University. Former positions: St. Paul's Polytechnic Institute, Lawrenceville, Va.; Carver High School, Phoenix, Arizona; Prairie View A. and M. College, Prairie View, Texas. Present position since 1951.
WILLIAM H. GAMBLE.....	A. and T. College <i>Dean of Men and Instructor of Education</i> B.S., A. and T. College. Further study, University of Pittsburgh and Columbia University. Present position since 1940.
ALICE C. JOHNSON GOSS.....	A. and T. College <i>Nursery Education</i> B.S., Boston University; Ed.M., <i>ibid.</i> Former positions: Nursery School and Kindergarten Teacher in Boston, Mass., Instructor at Virginia Union University. Present position since 1951.
JOE E. GRIER.....	822 Benbow Road <i>Poultry Husbandry</i> B.S., A. and T. College; M.S., University of Illinois. Former position: Huntersville High School. Present position since 1952.
HERBERT M. HEUGHAN.....	608 Douglas Street <i>Mathematics</i> B.S., Hampton Institute; M.A., Hampton Institute. Former positions: Hampton Institute, Virginia State College, Extension Teacher, Mary N. Smith High School. Present position since 1948.
ANNE C. GRAVES.....	612 Douglas Street <i>Education</i> A.B., Morris Brown College; M.A., University of Chicago; Further Study at University of Chicago. Former positions: Registrar, Morris Brown College; Instructor English and Speech at Morris Brown College. Present position since 1951.
MAYME WILKINS HOLT.....	901 Lindsay Street <i>English</i> B.A., Howard University; further study at Howard University; M.A., Catholic University, Washington, D. C. Former position: Bowman High, Mississippi. Present position since 1952.
V. ANTHONY HORNE.....	409 North Dudley Street <i>History</i> A.B., Tougaloo College; M.S.E., University of Notre Dame. Further study: <i>ibid.</i> Former position: Jackson College, Jackson, Mississippi. Present position since 1950.
ALFRED HILL, JR.....	2601 East Market Street <i>Entomology</i> B.S., Prairie View College; M.S., Colorado A. and M. College. Former positions: Instructor, Trinity County Vocational School, Groveton, Texas; Oakland Vocational Institute, Marlin, Texas. Present position since 1952.
JAMES T. JONES.....	2601 East Market Street <i>Electrical Engineering</i> B.S., A. and T. College. Former position: Instructor of Electronics and Radar, The Ordnance School, Aberdean Proving Ground, Maryland. Present position since 1952.

HAROLD CLINTON LAWTON.....	A. and T. College <i>Tailoring</i> B.S., Hampton Institute. Former position: Mel Walker Trade School, Chicago, Illinois. Present position since 1952.
MAJOR B. HOLLOWAY.....	2601 East Market Street <i>Auto Mechanics</i> Certificate, A. and T. College; Instructor Mechanics School, United States Army, 1941-45. Present position since 1945.
BEN EDWARD HOLT.....	149 Beech Street <i>English</i> B.A., Howard University; M.A., New York University. Present position since 1950.
FLORENCE B. IRVING.....	A. and T. College <i>Business Administration</i> A.B., Spelman; M.B.A., University of Chicago. Present position since 1949.
JAMES JENKINS, JR.....	A. and T. College <i>Carpentry</i> B.S., Hampton Institute. Present position since 1950.
CARL LINWOOD MANUEL.....	A. and T. College <i>Radio-Television</i> B.S., A. and T. College. Present position since 1947.
W. MALCOM JOHNSON, JR.....	2601 East Market Street <i>American History</i> A.B., Morgan State College; M.A., Catholic University; Former positions: Instructor for U. S. Army; High School Teacher in Maryland School System. Present position since 1948.
LORENO MEBANE MARROW.....	A. and T. College <i>English</i> B.S., A. and T. College; M.A., New York University. Present position since 1948.
EDDYE McCARTY.....	A. and T. College <i>Textile and Clothing</i> B.S., Southern University; M.S., Iowa State College. Present position since 1950.
JOSEPH H. MEYERS.....	315 Spring Street <i>Plumbing</i>
*WALLACE L. MITCHELL.....	422 N. Dudley Street <i>Carpentry</i> B.S., Shaw University; B.S., A. and T. College. Present position since 1935.
CALVIN F. MORROW.....	709 Julian Street <i>Shoe Repairing</i> B.S., A. and T. College. Present position since 1950.
PHILIP BLISS MOORE, JR.....	700 Martin Street <i>Mathematics</i> B.S., Roosevelt College; M.S., DePaul University. Present position since 1951.

\*Leave of Absence. Further study 1952-1953.

EDWINA T. MURPHY.....	1016 Ross Avenue <i>English-Spanish</i>
A.B., Fisk University; Further study, Columbia University, Anderson High School, Austin, Texas; Tollosson College, Austin, Texas; Summer High School, Kansas City, Kansas. Present position since 1946.	
MURRAY L. NEELY.....	802 Pearson Street <i>Physical Education</i>
B.S., Florida A. and M. College. Former positions: Instructor, Jones High School, Orlando, Florida; Instructor, Industrial High School, West Palm Beach, Florida; Assistant Coach, Florida A. and M. College. Present position since 1950.	
JAMES THOMAS NORRIS, JR.....	809 King Street <i>Automobile Mechanics</i>
Certificate, A. and T. College. Former position: Wm. Penn High School, High Point. Present position since 1947.	
BENJAMIN F. PERRY.....	1800 E. Market Street <i>Physics</i>
B. of Physics, University of Minnesota. Present position since 1951.	
WILLIAM JOHN PENN.....	215 N. Dudley Street <i>Band Music</i>
B.Mus., University of Michigan; M.Mus., University of Michigan. Former positions: Instructor of Music, Florida A. and M. College, Tallahassee, Florida. Present position since 1951.	
SHAUNEILLE PERRY.....	A. and T. College <i>English</i>
B.A., Howard University; M.A., Art Institute of Chicago. Former position: Drama Counselor, Parkway Community Center Summer Camps; Voice and Speech Instructor; Chicago Television Commercialist. Present position since 1952.	
†ROBERT S. POOLE.....	A. and T. College <i>Tailoring and Designing</i>
Hampton Institute; Mitchell School of Designing; Instructor, Edward Waters Institution. Further study in dry cleaning, Hampton Institute, Summer. Present position since 1926.	
YVONNE M. PORTER.....	A. and T. College <i>Music</i>
Bachelor of Music, University of Rochester. Present position since 1952.	
ANITA MEARES RIVERS.....	301 Beech Street <i>Mathematics</i>
B.S., Hampton Institute; M.A., University of Michigan. Former positions: Public Schools: Williamsburg, Va.; Maryland; Greensboro, N. C.; State Teachers College, Elizabeth City; Bennett College. Present position since 1950.	
LEWIS RICHARDS.....	2601 East Market Street <i>Brick Masonry</i>
B.S., Hampton Institute. Former position: Maryland School of Building Trades. Present position since 1952.	
HOWARD FRANKLIN ROBINSON.....	1915 Lutheran Street <i>Agricultural Economics</i>
B.S., A. and T. College, 1948; M.S., University of Illinois, 1949. Former positions: Instructor, Institutional Farm Program of Georgia, 1950-51. Present position since 1951.	

†Died December 7, 1952.

ROSEMOND J. SATTERWHITE.....	A. and T. College
	<i>Music</i>
B.S., West Virginia State College; M.A., Columbia University. Former positions: Tivoli High School, DeFuniak Springs, Florida; Claflin University, Orangeburg, South Carolina; Lane College, Jackson, Tennessee. Present position since 1951.	
CLEMMENT B. SMITH.....	2715 Yanceyville Rd.
	<i>Dry Cleaning</i>
National Association of Dry Cleaning Institute. Present position since 1949.	
MILDRED M. SIMMONS.....	1510 Lindsay Street
	<i>English</i>
B.A., Fisk University; M.A., University of Illinois. Present position since 1952.	
JESSE RICHARD SPIGHT.....	819 Broad Avenue
	<i>Tailoring</i>
B.S., Hampton Institute; M.A., Hampton Institute, Industrial Education; Certificate for designing in clothing, American Gentlemen's Designing School, New York City. Former positions: Assistant to designer, Pascal's Tailoring, New York City; Instructor of tailoring, St. Emma's Military Academy, Rock Castle, Va. Present position since 1951.	
*VIRGIL C. STROUD.....	1425 East Market Street
	<i>History</i>
B.S., A. and T. College; Graduate study, <i>ibid</i> . Former positions: Instructor, Florence High School, High Point, North Carolina, V. A. appraiser, A. and T. College Veterans Guidance Center. Present position since 1947.	
VEDA J. STROUD.....	1425 East Market Street
	<i>Commercial Education</i>
B.S., A. and T. College; M.A., Columbia University. Present position since 1942.	
JAY WALTER TYSON.....	A. and T. College
	<i>Mechanical Drawing</i>
B.S., A. and T. College; M.S., University of Illinois. Former positions: Census Bureau, Washington, D. C., Architectural Draftsman for F.H.A. Present position since 1952.	
LESTER P. WIGGINS, SR.....	A. and T. College
	<i>Mathematics</i>
B.S., A. and T. College. Present position since 1952.	
ANDREW W. WILLIAMS.....	A. and T. College
	<i>Machine Shop Practice</i>
Certificate Machinist Trade School, Chicago; A. and T. College. Former position: Instructor in Machine Shop Practice, U. S. Navy. Present position since 1946.	
RAYMOND P. WILLIAMS.....	1204 Kivett Drive, High Point, N. C.
	<i>Welding</i>
A. and T. College Vocational School of Carpentry; Washington State Vocational School of Welding. Certified by "American Bureau of Shipping Surveyors." Instructor of Industrial Arts, Palmer Memorial Institute. Present position since 1945.	
ROBERT EUNUS WILLIAMS.....	200 Raleigh Street
	<i>Chemistry</i>
B.S., Florida A. and M. College; M.A., Fisk University. Former Position: Florida A. and M. College. Present position since 1952.	
LLOYD W. WOLFE.....	1407 E. Washington Street
	<i>Mathematics</i>
A.B., Clark College, Atlanta, Georgia; B.S., University of Denver; Further study at University of Minnesota. Former positions: Instructor of Mathematics in the High Schools of Georgia; Instructor of Mathematics at Clark College, 1946. Present position since 1951.	

\*Absent for further study—1952-1953.

**STATE AGRICULTURAL EXTENSION SERVICE PERSONNEL**

R. E. JONES, B.S., M.S.....	<i>State Extension Agent</i>
J. W. JEFFRIES, B.S.....	<i>Assistant State Extension Agent</i>
M. R. ZACHARY, B.S.....	<i>District Farm Agent</i>
J. A. SPAULDING, B.S.....	<i>District Farm Agent</i>
MRS. DAZELLE F. LOWE, B.S.....	<i>District Home Agent</i>
MISS WILHELMINA R. LAWS, B.S.....	<i>District Home Agent</i>
MRS. RUBY C. CARRAWAY, B.S.....	<i>District Home Agent</i>
WILLIAM C. COOPER, B.S., M.S.....	<i>State 4-H Club Specialist</i>
MRS. IDELL JONES RANDALL, B.S.....	<i>Assistant 4-H Club Specialist</i>
ROBERT LOUIS WYNN, B.S., M.S.....	<i>Extension Dairy Specialist</i>
S. J. HODGES, B.S.....	<i>Extension Agronomy Specialist</i>
MISS GENEVIEVE M. KYER, B.S., M.S....	<i>Clothing and Home Management</i>
MRS. BESSIE B. RAMSEUR, B.S., M.A.....	<i>Subject Matter Specialist Foods and Nutrition</i>
MISS H. BLANCHE STEPHENS, Diploma.....	<i>Secretary to State Agent</i>
MRS. ROSALIE M. WOODEN, Diploma.....	<i>Secretary to Extension Supervisors (Women)</i>
MISS R. IRENE PETERSON, B.S.....	<i>Secretary to Extension Supervisors (Men)</i>
MRS. DOROTHY S. CAMERON, B.S.....	<i>Secretary to Extension Specialists (Women)</i>
MISS RUBY JOAN WILLIAMS, B.S.....	<i>Secretary to Extension Specialists (Men)</i>
MRS. ROSA T. WINCHESTER, B.S.....	<i>Home Agent, Guilford County</i>
B. A. HALL, B.S.....	<i>County Agent, Guilford County</i>
THOMAS W. FLOWERS, B.S., M.S.....	<i>Extension Horticultural Specialist</i>

## HISTORY OF THE COLLEGE

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The College was established as the "A. and M. College for the Colored Race" by an act of the General Assembly of North Carolina, ratified March 9, 1891. The object of the institution is declared by the act to be for the instruction in practical agriculture, the mechanic arts and such branches of learning as related thereto, not excluding academic and classical instruction.

By an act of the state legislature in 1915 the name of the college was changed to The Agricultural and Technical College of North Carolina. In 1939, the legislature authorized the College to grant the Master of Science degree in certain fields and to negotiate out of state aid scholarships to students desiring graduate work in fields not now obtainable at A. and T. College, but offered at the University of North Carolina.

The citizens of Greensboro donated fourteen acres of land and \$11,000 to be used in construction of buildings. In 1893 this was supplemented by an appropriation of \$10,000 by the General Assembly. Dudley Hall was completed in 1893 and the school opened in the fall of that year at Greensboro. Previously, it had operated as an annex to Shaw University in Raleigh, N. C.

The management and control of the College and the care and preservation of all its property are vested in a Board of Trustees, consisting of sixteen members, who are elected by the General Assembly, or appointed by the Governor, for a term of six years.

The Trustees, by act of the Legislature, have power to prescribe rules for the operation of the College; to elect the president, instructors, and as many other officers and assistants as they shall deem necessary; and have general and entire supervision of the establishment and maintenance of the College.

The financial support of the College for the payment of salaries and purchase of apparatus and equipment is derived from the United States, under an Act of Congress known as the Morrill Act, passed August 20, 1890. This act makes an annual appropriation for each State and Territory for the endowment and support of colleges for the benefit of agriculture and mechanic arts, to be applied "only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematics, physical, natural, and economic sciences with special reference to their application in the industries of life and the facilities of their instruction."

The College also receives an appropriation from the State for general maintenance, which cannot be provided for under the laws of governing the use of Federal appropriations.

The College holds institutional membership in the Association of Colleges and Secondary Schools, Association of American Colleges, The American Council on Education, The Association of Land-Grant Colleges and the North Carolina College Conference. It is on the approved list of the American Medical Association, and the Southern Association of Colleges and Secondary Schools.

The work of the College is carried on through six major divisions or schools. These are the School of Agriculture, the School of Education and Science, the School of Engineering, the Technical Institute, the Summer School, and the Graduate School.

The offerings, requirements and objectives of these schools are explained in the pages that follow. Special bulletins on the Technical Institute, the Graduate School, and the Summer School are published by the College. A copy of either may be had on request.

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## THE COLLEGE BUILDINGS

### DUDLEY MEMORIAL BUILDING

On January 27, 1930, the original Dudley Hall was destroyed by fire. The erection of the New Dudley Hall was undertaken immediately thereafter and on February 15, 1931, it was occupied. This is a fine fire-proof structure of three stories, larger than the old building and better suited to meet the needs of a modern college. It contains classrooms, assembly rooms, library, offices for the President, Dean of the School of Education and Sciences, Treasurer, Registrar, Busar, and other administrative officers.

### LIBRARY

The Library occupies the entire second floor of the Dudley Administration Building. It contains 43,562 volumes and receives 211 current periodicals, representing various departments of the college and 23 newspapers. Books have been carefully selected with a view to facilitating instruction and research.

All students registered in the College are entitled to full reference use of the library. Subject to certain rules and regulations, students may withdraw library books and materials to use in the library or for home use by presenting their photographic identification cards.

**The Library Hours:** The Library is open Monday through Friday from 8:00 a.m. to 5:00 p.m. and 6:30 to 9:30 p.m. except Saturday, when the hours are from 9:00 a.m. to 12:00 noon and 1:30 to 4:30 p.m.

### NORTH DORMITORY

The North Dormitory is a three-story building which contains rooms for about 70 women students.

### MORRISON HALL

Morrison Hall is a fireproof, three-story building with basement. It contains rooms for 130 women students.

### ANNIE W. HOLLAND HALL

Annie W. Holland Hall is a dormitory for women. It was completed in 1938 and is named in honor of Mrs. Annie W. Holland, who for a long period was State Supervisor of Colored Elementary Schools in North Carolina. The building is fireproof and is located in one of the most beautiful sections of the campus. It is constructed to house 155 students.

### THE COLLEGE BUILDINGS RENAMED

By a special vote of the Board of Trustees in its annual meeting for 1933, the following changes in the names of buildings were made: the Agricultural Building became Noble Hall in recognition of the distinguished services of the late Chairman of the Board of Trustees, Dr. M.C.S. Noble, and the Mechanics Building became Crosby Hall in honor of the first president of the College, Dr. John O. Crosby.

### VANSTORY HALL

Vanstory Hall, formerly known as the South Dormitory, is a three-story, brick building, which contains rooms for 92 students. The basement is used for offices for physical education department.

### NOBLE HALL

Noble Hall is a fireproof, three-story structure, with basement. It contains laboratories for botany, dairy products, zoology, and geology. Classrooms and offices for the Dean, School of Agriculture, and the heads of divisions are provided.

### CROSBY HALL

Crosby Hall, one of the few remaining historic buildings on the campus, is a three-story structure. It houses on the ground floor auto mechanic shops, maintenance and the College Post Office. The first floor contains bookstore, and classrooms. The third floor houses the Departments of Fine Arts.

### ALEXANDER GRAHAM HALL

The Alexander Graham Hall is a three-story fireproof structure located near U. S. Highway No. 70. The building was constructed in 1939 with funds appropriated by the State and the Federal Emergency Administration of Public Works and contains the following laboratories and shops; Physics, Engineering, and Industrial Arts. The office of the Dean of the School of Engineering is also located in this building.

**RICHARD B. HARRISON AUDITORIUM**

The Richard B. Harrison Auditorium, completed in 1940, is named in honor of the noted actor and teacher who gained world renown as "De Lawd" in the great stage production of 1930, *The Green Pastures*. Previously Richard B. Harrison had been well and favorably known to the students and constituents of the A. and T. College as a teacher of dramatics and public speaking, a position he had held at the College for a number of years and relinquished to accept the part in the play mentioned above.

This auditorium, one of the largest and best equipped of its kind in the State, contains in addition to the main assembly room, special rooms for dramatics, band and music classes, and offices for the music and dramatic departments. It is the center for public programs, religious services and extracurricular activities.

**MURPHY HALL**

Murphy Hall is a one-story fireproof building which contains the cafeteria, the kitchen, and the refrigeration plant. The cafeteria has seating capacity for 800 students. It is one of the most beautiful buildings of its kind to be found in the State.

**FLORENCE GARRETT PRACTICE HOUSE**

The Florence Garrett House is the new home economics practice house. The building was named in honor of Mrs. Florence Garrett who was among the first women students to attend the College, and who bequeathed her small estate to the College as a beginning of an endowment. The Practice House is a two-story brick structure, conveniently located and adequately constructed to meet the needs of the home economics students.

**NORTH CAMPUS**

In the fall of 1946, the College was successful in purchasing the military hospital area of the local army overseas Replacement Depot. This plot comprises about seventy-five acres of improved land and is one block north of the main campus.

This new area has been designated the North Campus. Some of the buildings are being used for class rooms, and others for offices and administrative purposes. Physical Education classes for men are held in the recreation hall, and other classes are conducted in various buildings.

The former army administration headquarters have been converted into offices for the Air and Army ROTC headquarters.

### TEMPORARY HOUSING

In 1946, the College was allotted seventy-two temporary housing units for the accommodation of married veterans. These units have been erected and are now occupied by married veterans enrolled at the college.

A dormitory containing space for one hundred and twenty-eight single veterans has also been allotted by the federal housing authority.

### AUSTIN W. CURTIS HALL

The Women's New Dormitory is a modern three-story structure with basement facilities which include a beautiful recreation room, kitchenette, beauty room, and laundry room. This building has a spacious lounge on the first floor which has modernistic furnishings. The building has seventy-four student rooms which are furnished with furniture designed for individual comfort and enjoyment. A guest room is also included in this dormitory located in the area adjacent to Annie W. Holland Hall.

### W. KERR SCOTT HALL

The Men's New Dormitory is the first of the permanent buildings erected on North Campus. Completed and furnished in 1951 at the cost of nearly \$2,000,000, it is the largest building on the campus and one of the largest, most modern and beautiful buildings of its kind in the South. It contains club and recreation rooms, lounges, baggage rooms, play areas, and living quarters for 1,010 students as well as apartments for counselors and supervisory personnel.

### THE PRESIDENT'S HOME (THE OAKS)

The President's Home (The Oaks). The President's home is a two-story brick structure of modified Georgian architecture which was completed and occupied in 1950. It is nestled under a group of massive oaks in the northwestern corner of the main campus and is beautifully landscaped. The home is also situated to provide a commanding view of the main campus entrances.

### JULIAN PRICE HALL

The new trades building was constructed in 1951 and is located on North Campus. It is a modern fireproof structure with facilities for training in: auto mechanics, cabinetmaking, upholstering, carpentry, ceramics, drafting, electric wiring, machine shop, masonry, photography, plumbing, radio and television servicing, sheet metal, shoe repairing, tailoring, welding, painting and decorating.

In addition to the eighteen shops and laboratories, the building contains classrooms for related instruction, projection room, reading room and office of the dean of the Technical Institute.

### THE COLLEGE GYMNASIUM

A new gymnasium is under construction and is scheduled to be completed during the spring of 1953. The main arena will include two large basketball courts which would permit the playing of two basketball games at the same time. Seating facilities will accommodate more than 3,000 spectators. Included in the main arena is a modern press box with broadcasting facilities.

The Department of Physical Education will be housed in offices located in the front of the building. In the rear will be located a large swimming pool, a combination dance and individual physical education class and activity room, together with a training room, class and varsity locker rooms.

### CENTRAL HEATING PLANT

The heating plant, erected in 1952, is located on the south side of the campus on a railway siding. It contains two (2) 30,000 lbs. per hr. steam boilers with the latest mechanical equipment including complete fuel and ash handling systems. The plant, including the 150 ft. radial brick chimney is designed for additional capacity that will be installed as need arises. The plant furnishes steam and hot water to all the buildings on the campus using these services through approximately 8,500 feet of under-ground distribution system and tunnels.

### LAUNDRY AND DRY CLEANING PLANT

A modern fireproof structure located near the center of the main campus. These plants are both modernly equipped to adequately serve the students and faculty of the college. A complete course of instruction is offered in the latest methods of Laundry Management and Dry Cleaning.

### THE COLLEGE FARMS

The college has 672 acres of farm land on which there has been developed a Poultry Farm, Dairy Farm, Piggery, Beef Cattle Farm and a General Farm.

The Poultry Farm occupies twenty acres. The buildings consists of a commercial laying house with a capacity of 1200 layers, breeding house for 600 birds; two broiler houses with a yearly capacity of 18,000; a turkey house for 400 birds; and a general utility house with facilities for egg storage, incubation, and processing. In addition there is an eight room duplex apartment which houses the plant attendants. The Poultry Farm provides students with practical experience in egg and broiler production management, incubation and brooding.

The Dairy Farm occupies a tract of 170 acres. The Dairy Plant consists of a seventy stanchion milking barn with feed and milk rooms

attached, calf barn, maternity barn, bull barn, lounging shed, manure pit, two silos with a gross capacity of 230 tons and a seven room duplex apartment house that accommodates the plant attendants. The Dairy Herd consists of 90 registered jersey cattle and 6 registered holstein.

The Piggery is being established on a seventy acre tract of land. A four room house has been constructed. The land will be developed into improved pastures and fenced. Portable hog houses will be used for shelter.

The Beef Cattle unit was recently established with the purchase of 23 head of cattle. The present herd consists of 7 registered eighteen months old Aberdeen Angus heifers and a bull, 6 registered two-year old Hereford heifers and a bull, and the remainder consists of grade Herefords.

Fifty acres of improved pasture has been established for the beef herd. A 40x100 foot barn with hay storage space furnishes shelter for the beef cattle.

The general farm cultivates about 250 acres of land for hay silage and grain production and maintains the pastures for the dairy and beef cattle units. It is adequately equipped with tractors, hay balers, combines, seed drills, fertilizer distributors and accessory attachments needed for its operation.

#### D. S. COLTRANE HALL

The D. S. Coltrane Hall is a one story brick structure with asphalt tile floor and fluorescent lights. It has a floor area of 11,533 square feet that is divided into 40 offices, one work room, one conference room, one reading room, one assembly room, and four storage closets.

This building furnishes office space for thirteen staff members and five clerical workers of the Agricultural Extension Division, the State Supervisor of Vocational Agriculture, the Executive Secretary of the New Farmers of America, Supervisor of Veteran Training Program, and State Tobacco Specialist of Production and Marketing Administration.

#### PUBLIC RELATIONS—ALUMNI AFFAIRS BUILDING

The Public Relations—Alumni Affairs Building is a modern five room Cape Cod Cottage which houses offices for these operations. In addition to a comfortable lounge provided for alumni and visitors, it contains two private offices, a photographic darkroom, a workroom and a photograph-engraving morgue. It is the first building on the left of the East Market Street entrance to the campus.

## GENERAL INFORMATION

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### ADMISSION TO COLLEGE

High school graduates may qualify for admission by either of the following methods:

1. Certificate from an accredited high school.
2. Examination conducted by the College Entrance Board.

A graduate from an accredited high school should present 16 units of acceptable entrance credits distributed as indicated below. A unit consists of a study of a subject pursued for a year, five periods per week, each period being forty minutes in length and the school year should be nine months in duration.

### ENTRANCE UNITS

English .....	4
Mathematics, including Algebra and Plane Geometry ..	2
Social Studies (Preferably U. S. History) .....	1
Chemistry, Physics, Biology or General Science .....	1
Electives .....	8
Total .....	16 Units

### ELECTIVE UNITS

Agriculture	Industrial Arts	Physical and
Art	Latin	Health Education
Commercial Studies	Mathematics	Science
Foreign Language	Mechanical Drawing	Social Studies
Home Economics	Music	*Solid Geometry

\*Required of students who plan to enroll in Engineering.

A student may be admitted with a deficiency of one unit in natural science if he presents 16 other acceptable units. This deficiency must be removed by taking a non-credit course in General Science.

A student may also be admitted who is deficient in Algebra or in Geometry provided he has at least 16 acceptable units. He will then be required to take the Algebra or Geometry needed without college credit before entering the sophomore year to remove this deficiency.

At least eight units may be presented from the list of elective courses except that not more than *four* units will be accepted in vocational courses such as agriculture or home economics nor more than *two* units in activity courses such as band and physical education.

Applicants who graduated from non-accredited four-year high schools must pass the entrance examination.

Applicants who do not meet the requirements for admission to any curriculum leading to a degree may enroll in the Technical Institute to pursue a Trade Course. Those who are high school graduates will take the regular trade courses in the 411 series and non-high school graduates will take the trade courses in the 011 series described in the Vocational Bulletin.

### FRESHMAN WEEK

1. Each candidate for the freshman class, who is not a resident of Greensboro, is expected to arrive on the campus the day preceding the date designated on the College Calendar for Freshman Orientation. All freshmen should be present by 8:00 a.m. on the first day.

2. The "permit to register" furnished beforehand by the Registrar, indicating the School or Department in which the applicant wishes to register must be ready for presentation to proper authorities.

3. The dates indicated in the College Calendar for Freshman Orientation and registration as well as those for upperclassmen must be strictly observed. Those seeking registration after the scheduled date, must pay late registration fee of \$1.00 per day until a maximum of \$5.00 is reached.

4. Admission to class will be permitted only after registration has been completed and certified on the official card of the Bursar.

### CLASSIFICATION OF NEW STUDENTS

#### 1. *Freshmen.*

a. Graduates from high schools will receive entrance ratings according to the standing of their respective schools.

b. If the student is not a graduate of an accredited high school, he must comply with the requirements by examination. Entrance examinations will be held at the College on the day of registration.

c. Every student, irrespective of the method by which he seeks admission, must present to the College through the principal of his former school, a transcript covering his entire record of subjects and grades and a statement including the principal's estimate of his character.

NOTE: All entering freshmen will be required to take placement tests in English and mathematics. All who fail in the English examination will be assigned to a remedial course in English (English 210). All who fail in the mathematics examination will be assigned to a remedial course in mathematics (Mathematics 309).

All who fail in the French test will take French 211.

**2. Students of Advanced Standing.**

After transcripts have been received, applications for advanced standing will be passed upon by the admission officer, and students will be furnished a statement of credit allowed.

All persons who desire to enter the College should make application to the Registrar before the opening of the quarter for which they wish to enroll. Those who desire to be admitted by certificate should apply as soon as possible after graduation from high school. Early attention to this matter will save the student delay at the opening of the session.

**3. Special Students.**

In exceptional cases applicants of mature years, of special training along particular lines, or of long experience in specific fields of knowledge, may be admitted to the college to pursue a non-degree program or study certain subjects as a special student, even though he cannot satisfy entrance requirements. Such a student must submit satisfactory evidence of his ability to profit from such a program and do a passing grade of work in each subject.

**CLASSIFICATION OF ADVANCED STUDENTS****Sophomore—**

To be classified as a sophomore a student must have completed fifty hours of work open to freshmen with at least fifty grade points. As a part or in addition to this, the freshman courses in education, vocations, military science or physical education, and remedial English and mathematics must be completed.

**Junior—**

Before being classified as a junior a student must have completed one hundred quarter hours of work required of sophomores with a similar number of grade points. No student will receive junior classification until all required freshman and sophomore courses have been completed.

**Senior—**

Before gaining senior classification a student must have completed at least one hundred and fifty hours of required and major work with a minimum of one hundred and fifty grade points.

**STUDENT LOAD**

The unit of credit is the quarter hour. It stands for one recitation or two laboratory periods per week for a period of twelve weeks. Each recitation period requires approximately two hours of preparation.

Regular students will be required to register for a minimum of 14 hours of college credit per quarter.

(a) A student whose general average is "C" may register for not more than the normal load of his curriculum.

(b) Students whose average is 2.5 grade points, with no grade below "B" may be permitted to register for not more than 21 hours of work for the quarter following such a record.

Students carrying a normal load in regular classes will not be permitted to register for credit in evening or extension classes.

### MARKING SYSTEM

	<i>Grade Points</i>
93-100—A (Excellent) .....	3
82- 92—B (Good) .....	2
71- 81—C (Fair) .....	1
60- 70—D (Poor, but passing) .....	0
Below 60—F (Failure) .....	—1
I (Incomplete)	
W (Withdrew)	

### GRADE POINTS

The maximum points which a candidate for graduation with minimum hour requirements can make under this system will be 600, the minimum 200; this mean that, in order to graduate a student must make an average of "C".

### REMOVAL OF FAILURES

At his first opportunity a student must repeat in class a required course in which he has failed, unless the Dean of his School authorizes a suitable substitute course.

### INCOMPLETES

Students are expected to complete all requirements of their courses during the quarter in which they are registered. However, if at the end of the quarter, a small portion of the work remains unfinished that can be completed without further class attendance, the grade for the student may be reported "Incomplete," providing his standing in the course is of passing quality.

To secure credit the work must be completed within one month after the beginning of the succeeding quarter in residence, otherwise, the grade automatically becomes "F."

At the close of the quarter, each teacher shall file with the Registrar a list of names of students who have received "Incomplete" grades together with a statement of all the work required to complete the course before a final grade can be reported to the Registrar.

After registration has been completed in the following quarter and it has been determined that a student has registered, both he and the teacher shall be notified by the Registrar of the outstanding "Incomplete" grade and that it must be removed within the prescribed period.

## COURSE NUMBERING SYSTEM

The instruction of the College is administered by five main groups:

- The Faculty of the Graduate School
- The Faculty of the School of Agriculture
- The Faculty of the School of Education and Science.
- The Faculty of the School of Engineering.
- The Faculty of the Technical Institute.

The number of each course in the Agricultural School begins with the figure 1; those in the School of Education and Science with the figure 2; those in the school of Engineering, with the figure 3, and those in the Vocational School, with 4.

Each course is designated by a number containing three figures. The first indicates the school in which it is offered; the second (with a few exceptions), its academic classification; and the third, either the quarter in which it is usually given or its serial number.

### *Examples:*

History 211 is a course offered by the Faculty of the School of Education and Sciences; it is open to freshmen, and is usually offered in the first quarter (Fall Quarter).

Chemistry 111 is a course offered by the Faculty of the School of Agriculture; it is open to freshmen, and it is the first of a series.

Physics 323 is a course offered by the Faculty of the School of Engineering; it is open to Sophomores, and it is usually given in the third quarter (Spring Quarter).

### *Exceptions:*

(a) There are some unavoidable exceptions to this system, especially with reference to the second and third figures. Some courses with the middle figure 1 are open to upperclassmen, and there are a few courses with the middle figure 2 open to freshmen. Courses are not in every case given during the quarter indicated by the third figure (where the third figure is meant to indicate the quarter rather than the serial number).

(b) Courses in all schools open to advanced undergraduates and graduates are numbered 500 plus; strictly graduate courses are numbered 600 plus.

(c) Courses in the Vocational School are numbered 400 plus.

## SCHEDULE REGULATIONS

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### EXAMINATIONS

Entrance examinations and examinations for removal of conditions will be held on the day of registration. All students who have to remove conditions should avail themselves of this opportunity.

### CHANGES IN SCHEDULE

Students have one week from the beginning of each quarter in which to make adjustments in their schedule. After this time no changes will be permitted except by written permission of the dean of the particular school. The registrar will then recall the class card and discharge the student from the class.

No student will be allowed credit for courses added to his schedule without permission after it has been approved, and any student illegally dropping a course for which he has been registered will be assigned the grade "F" at the end of the quarter.

### CLASS ATTENDANCE

Students will be required to attend scheduled assemblies, vespers and the regular exercises of the courses in which they are registered.

No student is entitled to any cuts whatever; a cut is defined as an unexcused absence from any class. Cuts will be considered on a course basis inasmuch as a student may cut repeatedly from a certain course while he attends regularly all his other classes.

As soon as a student is reported as having three cuts from any class that student will be placed on probation by the Dean of Men and the student's parents will be notified accordingly. The student and parents will be notified that if the student takes two more cuts from the course in which he already has three cuts he will be officially dropped from that course. Should a student cut excessively in all his courses the result will be dismissal from the institution for the remainder of the quarter.

### SCHOLARSHIP

Students will be expected to do a passing grade of work at all times. Students failing to attain a "C" average in any quarter will be placed on probation the following quarter. Unless definite improvement is made while on probation, the student may be asked to withdraw.

## HONOR ROLL

To encourage scholarship and integrity, the College publishes an Honor Roll at the end of each quarter. Regular students whose average grade in all courses is "B" shall be eligible for the Honor Roll. Those students whose grade point average is 2.5 each quarter for three consecutive quarters shall be eligible for a Scholarship.

## WITHDRAWAL FROM COLLEGE

Students who for any reason find it necessary to withdraw from College before the scheduled termination of the school year should file an official withdrawal with the bursar. Forms for this purpose may be secured in the office of the registrar. Students should have these forms signed by the designated officials and filed before leaving the campus.

All accruing accounts and obligations against such students will terminate on date of filing withdraw notice. Accruing accounts will continue against those failing to file notice of withdrawal.

## EXTRACURRICULAR ACTIVITIES

Each student shall be encouraged to participate in some (one) extracurricular activity, upon which he shall be graded with regards to excellence.

## QUARTERLY EXAMINATIONS

A final examination will be required as a part of every course. An examination schedule showing time and place of meeting of each course and section will be published quarterly. Schedules so published will be followed without variation in any respect, except by special permission of the dean of the school in which the course is offered.

## DEPORTMENT

Students will be expected to conduct themselves properly at all times and any student who manifests unwillingness to conform to the rules and regulations that are prescribed, or that may be prescribed to govern the student body, or any student whose influence or deportment seems detrimental to the best interest of the school will be asked to withdraw from the institution.

A student automatically forfeits his privilege of working for pay at the College when, for any reason, he is placed on probation because of misconduct.

## TEACHERS' DAILY REPORTS

Teachers are required to file in the office of the dean of their school a report of their classes and other official activities daily. This report should show among other things the number of classes scheduled, the classes taught, the number of students present and absent and a list of those absent. This report must be filed at the end of each teaching day.

### TEACHERS' QUARTERLY REPORTS

Each teacher will be required to file duplicate copies of his final report of grades for each class. These reports showing the name of each student registered in the class and the mark assigned for the quarter together with copies of the final examination questions will be filed, the original in the registrar's office and the duplicate in the office of the dean of the appropriate school, on or before the scheduled date for such reports. Teachers are cautioned to see that the name of every student assigned to their classes appears on the class roster with a mark correctly assigned. After marks have been filed in the registrar's office, teachers cannot change them except by petition to the Administrative Council.

### RELIGIOUS ACTIVITIES

One of the purposes of the college is to maintain a high moral tone and to develop a broad, tolerant religious spirit among its students. The College Chapel has been organized on a non-denominational basis with the Director of Religious Activities serving the function of director. The Chapel provides within the college environment an opportunity for students and faculty to continue the development and enrichment of their spiritual life through participation in a program of religious activities similar to those of their home churches. In addition to two public worship services per month, the religious program is implemented through the activities of the Sunday School, the Official Boards of the Chapel, the Usher Board, The Fellowship Council, Young men's Christian Association, and Young Women's Christian Association. The College encourages students to maintain ties with their religious heritages by attending local churches of their denominations. For their convenience a roster of churches in the college community is printed in the Student Handbook.

### HEALTH SERVICE

It is the purpose of the health service program to improve and protect personal and environmental health conditions and thereby develop a safe and healthy college community. Through a competent staff of doctors, dentists, and nurses, student health problems are given professional attention.

Upon entering the institution, and each fall thereafter, a thorough health examination, including a blood test, is given to each student. Follow-up and referral services are rendered for all defects found.

The college infirmary is housed in a new thirty-eight bed building with modern facilities, including a complete dental unit, clinical laboratory, X-ray and physical therapy equipment. Each student pays a small medical fee, which in great part, covers medicine, the care of minor illnesses and injuries. These services are available on a twenty-four hour daily basis.

Serious cases requiring hospitalization are referred to city hospitals. These services are not covered by the student medical fee.

ALL STUDENTS ARE REQUIRED TO BRING A BLOOD TEST REPORT WITH THEM WHEN THEY COME TO SCHOOL. THIS REPORT MUST BE THE ORIGINAL FROM THE CITY OR STATE HEALTH DEPARTMENT AND DATED AFTER AUGUST 1, 1953. A FEE OF \$1.00 WILL BE CHARGED TO THOSE WHO HAVE TO HAVE IT TAKEN AT THE COLLEGE INFIRMARY.

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## DORMITORY REGULATIONS

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### BOARDING STUDENTS

All students who room on the campus must take meals in a college cafeteria.

### NON-RESIDENT STUDENTS

Students whose legal residence is not in Greensboro will not be permitted to board and lodge off the campus unless they have special permission, or unless they have employment that requires them to live on the premises.

### FRATERNITY HOUSES

The College will not permit fraternities, sororities or other groups to establish "houses" off the campus.

### DISCIPLINARY SUSPENSION

All students, except *bona-fide* residents of Greensboro, are required to leave the campus and the city within forty-eight hours after disciplinary suspension. Permission to re-enter the College will not be granted if this regulation is violated.

### DORMITORY PROVISIONS

The College provides for each student a bed, bureau, study table and straight chair. Students are required to furnish their own curtains, blankets, bed linen, rugs and towels. Electrical appliances, other than those already supplied, are forbidden. Exception: Radios.

**CREDIT EVALUATION SYSTEM**

The credit value of each course is indicated by three numbers. The first represents the full credit value in quarter hours, the second, the number of recitations per week, and the third, the number of hours spent in the laboratory each week. For example: French 211, Credit 5(5-0) means that this course carries 5 hours credit, and is conducted by lecture or recitation 5 times per week with no assigned laboratory; while Chemistry 112, Credit 5(3-4) carries 5 hours credit; 3 hours being devoted to lecture or recitation and 4 spent in the laboratory. Two hours in the laboratory are required for 1 hour of credit.

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**GENERAL GRADUATION REGULATIONS**

(For special graduation requirements for each School—  
see pages 57, 60)

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Graduation from the A. and T. College involves the satisfaction of the following requirements:

1. The candidate for a degree must have selected a specific curriculum having the approval of the Dean of the School in which he is registered. This curriculum must be completed.
2. Whether registered in Agriculture, Education and Sciences or Engineering, he must complete at least 200 quarter hours and 200 grade points.
3. The credit hours must aggregate at least 200, including the required courses in military science and physical education. The grade points must equal 1 times the number of credit hours undertaken whether passed or failed. After securing 200 credit hours if the student is deficient in grade points, he must take additional courses to secure these points. The student must obtain an average of 1.5 or more in his major field and 1.0 or more in his minor field. A minimum of one year is residence is required.
4. It is the aim of the institution to send forth men and women who are fit representatives. To this end, the College reserves the right to refuse to admit any student to the Senior Class or to graduate anyone who though qualified by class record may otherwise seem unfit.
5. Payment of diploma fee of five dollars (\$5.00) must be made to the bursar on or before February 1 preceding graduation.
6. Students in the graduating class must clear all conditions by the end of the quarter preceding graduation.
7. Candidates for graduation must file in office of the Registrar an application for graduation upon the form provided, at least four months prior to the date they expect to graduate.

## GRADUATION WITH HONORS

By a vote of the Administrative Council in the Spring of 1938, it was decided that henceforth graduation honors would be awarded candidates completing all requirements for graduation in accordance with the following stipulations: (1) Those who maintain throughout their course a grade point average within the range of 2.00 to 2.24 will receive "honor"; (2) those who maintain a general average within the range from 2.25 to 2.49 will receive "high honor"; and (3) those who maintain an average within the range from 2.50 to 3.00 will receive "highest honor." Publication of honors and scholarships is made at graduation and in the college catalog.

## DEGREES

All students successfully completing any of the four-year courses of study shall be entitled to the degree of Bachelor of Science.

1. Those graduating from a four-year curriculum offered in the School of Engineering shall be entitled to the Bachelor of Science degree in Architectural Engineering, Electrical Engineering, Mechanical Engineering, Engineering Mathematics, Engineering Physics, Business, Fine Arts, and Industrial Education.

2. Those graduating from a four-year curriculum in the School of Agriculture shall be entitled to the degree of Bachelor of Science in Agriculture.

3. Students successfully completing a curriculum in the School of Education and Sciences shall be entitled to the degree of Bachelor of Science.

4. The Master of Science degree will be awarded those meeting requirements for same. See page 70.

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## STUDENT ORGANIZATIONS

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### ALPHA KAPPA MU HONOR SOCIETY

The Alpha Kappa Mu Honor Society is a national scholarship organization with local chapters established in grade "A" colleges.

The local chapter is now known as the Gamma Tau Chapter of the Alpha Kappa Mu Honor Society, and qualifications for Gamma Tau which have been changed to conform to those of the National Organization are as follows:

1. Candidates must have completed ninety quarter hours or sixty semester hours with an average of not less than 2.3. These must include all required courses listed for freshmen and sophomores.

2. Membership is open to all students of the College provided they meet scholastic requirements; in the case of transfer students, there must have been a chapter of Alpha Kappa Mu or some other honor society with equivalent standards, rules and regulations at the institution from which they transferred.

3. Candidates must never have been suspended for disciplinary problems.

The Society encourages participation in at least one extracurricular activity. All students recommended by the registrar and personnel deans as having the qualifications listed above are eligible for membership.

### SOPHIST SOCIETY

This organization is composed of regular college students of Freshman, Sophomore, and Junior classification who maintain a minimum average of 2.3. The purpose of this organization is to encourage high scholarship among all college students.

Persons who remain in the Sophist Society for three years are eligible for membership in Alpha Kappa Mu Honor Society during the senior year.

### SIGMA RHO SIGMA RECOGNITION SOCIETY

Sigma Rho Sigma Recognition Society is a national honor society for social science majors; its membership is open to graduates and undergraduates. Chapters of the society are located in the various colleges represented in the membership of the Association of Social Science Teachers in Negro colleges.

The purposes of the society are:

1. To encourage study, promote research and to recognize achievement in the field of social science.
2. To promote the cooperation of students in the field of human relations.
3. To promote professional growth and development among the members.

To be eligible one must:

1. Be a junior concentrating in the social sciences, with an average of two points or above and have a minimum credit of 25 hours in major courses in the social sciences.

### BETA KAPPA CHI

Beta Kappa Chi is a recognition society for honor students in fields of science and engineering.

### FRATERNITIES

The following national fraternities have chapters at the college: Alpha Phi Alpha, Omega Psi Phi, Phi Beta Sigma, and Kappa Alpha Psi.

## SORORITIES

The following national sororities have established local chapters: Alpha Kappa Alpha, Delta Sigma Theta, Zeta Phi Beta, Iota Phi Lambda and Sigma Gamma Rho.

## PAN-HELLENIC SOCIETY

The Pan-Hellenic Society is a federation of all fraternities and sororities on the campus. Its membership is composed of elected representatives from each Greek-letter organization. The main purpose is joint action for maintaining high standards in fraternity and sorority life at the institution.

## COLLEGIATE 4-H CLUB

The Collegiate 4-H Club is composed of students who have had previous experience as 4-H Club members in high school. An informal meeting of a business and social nature is held monthly. Honorary members may be elected to the club from time to time.

## THE COLLEGIATE NFA CLUB

The Collegiate Chapter of the New Farmers of America is composed of agricultural students who are former NFA members or trainees enrolled in the teacher training department of the School of Agriculture. The purpose of the collegiate chapter is to give training and experience to students who will later become teachers of vocational agriculture. Honorary members may be elected to the collegiate chapter of the New Farmers of America.

## THE AGRICULTURAL ASSOCIATION

This association is composed of agricultural students. It meets twice monthly for business and social purposes.

Honorary members may be elected to the association from time to time.

## THE COLLEGE BANDS

The several college bands occupy an important place in the life of the institution. The Band Department is complete with full instrumentation and equipment for the many varied activities of marching and concert organizations. Expert instruction in all band instruments is given by a staff of trained bandmasters.

The organizations in the Band Department are:

*Beginners Band*—for any College student who desires to learn to play a musical instrument.

*Intermediate Band*—for students who have had not more than three years of previous experience on a band instrument.

*Senior Bands*—The 100-piece marching group for the many athletic events that take place in the fall. Open to those students who have four or more years of experience on a band instrument. Also the 80-piece symphony concert group open only to those qualified students who successfully audition for entrance.

*Women's Band*—The "All-Girls" band that supplements the regular College Marching Band in the fall at all athletic events. During the remainder of the year this group appears at student recitals in minor concert appearances.

*Military Band*—A separate organization that furnishes music for all military reviews, drills, and parades. Open only to members of the Infantry and Air Force Reserve Officers Training Corps.

A splendid opportunity is thus offered to competent and worthy students to learn band music without extra expense to themselves.

### FOREIGN LANGUAGE CLUBS

*Le Cercle Francais* and *El Circulo Espanol* meet once a month during the academic year.

### THE FORTNIGHTLY CLUB

This organization, which gets its name from the period normally intervening between each meeting, is composed mainly of English majors and other advanced students who are interested in coming together for the purpose of exchanging ideas about books and people that have influenced or are influencing the life of their time.

### THE DEBATING SOCIETY

The Kappa Phi Kappa Forensic Society, better known as the Debating Society, is designed to stimulate interest in public speaking and debate. It is composed of college students who have distinguished themselves in public performances in these fields.

The Society awards a certificate of merit to any graduating senior who has participated in non-varsity debates or who has otherwise rendered meritorious service to the Kappa Phi Kappa Forensic Society for at least two years.

### THE A. AND T. LITTLE THEATRE

The Richard B. Harrison Players is an outstanding campus organization whose genuinely artistic work bespeaks the excellent training and unusual opportunities rendered by the dramatic workshop and laboratory theatre for experimentation in acting, playwriting, stage-craft, and play direction.

### CHORAL ORGANIZATIONS

The College Choir, the Men's Glee Club and the Concert Choir have won for themselves an enviable reputation for the genuine artistry of their work. These organizations, open to all qualified students, offer extracurricular activity which is at once instructive and enjoyable.

## LOANS, SCHOLARSHIPS AND PRIZES

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### COLLEGE SCHOLARSHIPS

The College will grant a scholarship for one year to any student who makes a grade average of 2.5 for three quarters of the preceding school year. This scholarship will pay tuition and can be used for no other purpose.

### SCHOLARSHIPS IN DAIRY HUSBANDRY

Six scholarships are given each year to high school graduates who wish to take a one-year short course in dairy husbandry. Board, room and all fees are paid. Applications should be obtained from the Dean of Agriculture before August 1 of each year.

### NFA SCHOLARSHIPS

The College offers a one-year scholarship of \$50.00 to the NFA member graduate from high school who has the best record in supervised practice work and scholastic activities for a period of four years.

### Y.W.C.A. SCHOLARSHIP

As a means of promoting scholarship among high school girls and to encourage them to attend college, the College Y.W.C.A. offers, each year, a scholarship of \$50.00 to be used in defraying college expenses.

### SUSIE B. DUDLEY SCHOLARSHIP

This scholarship of \$100.00 in cash is made possible by Mrs. Leora J. Spaulding, class of 1935, of Greensboro, North Carolina, and is given in honor of the late Mrs. Susie B. Dudley, wife of former President James B. Dudley. It is open to women students who are doing or who plan to do graduate study at the college in some phase of English or education relating to dramatics, public speaking or writing, activities in which Mrs. Dudley was personally interested.

### 4-H CLUB SCHOLARSHIP

In order to promote interest among Negro 4-H Club boys in North Carolina and to encourage continuous achievements in all phases of 4-H Club work, the College offers a one-year scholarship of \$50 to the high school graduating senior with the best record in 4-H Club work. This is to be used in defraying expenses at the institution.

### WILLIAM H. FOUSHÉE MEMORIAL SCHOLARSHIP CUP

Dr. J. M. McGee of Greensboro, each year presents a scholarship cup in memory of William H. Foushee, Jr., a former student of A. and T. College, to the member of the Junior Class with the highest scholastic average.

**THE CHARLES L. COOPER AWARD**

Mu Psi Chapter of the Omega Psi Phi Fraternity presents annually this award in memory of Dr. Charles L. Cooper, a former professor of Industrial Education at A. and T. College. It is presented to the student in Industrial Arts with the highest average above two points.

**THE REGISTER AWARD**

As a means of promoting a wider interest and greater activity on the part of the students in the field of journalism, the College *Register* awards a gold key to those members of the graduating class who complete a period of at least two years of meritorious service as members of the *Register* staff.

**ALUMNI ATHLETIC AWARD**

The Philadelphia branch of the College Alumni Association awards a gold medal each year to the student of the graduating class making the best record in major intercollegiate sports.

**ALUMNI SERVICE AWARD**

The Gate City (Greensboro) Chapter of the Alumni Association makes an award each year to that member of the graduating class, voted by the Administrative Council as having rendered the "most distinctive service to the College and to the community."

**THE KAPPA PHI KAPPA KEY**

The Kappa Phi Kappa Key was first awarded in 1928 by the Kappa Phi Kappa Debating Society.

The key is awarded to the member, or members of the graduating class who have been speakers on the college varsity team for two years.

**DEBATING TROPHIES**

The Rand-Hawkins-McRae debating trophy is provided by Messrs. J. M. Rand, J. A. Hawkins and S. D. McRae, graduates of the College, Class of 1906, and is awarded annually to the members of the graduating class who have at least three years of varsity debating.

Freshman-Sophomore Debating Trophy—The college presents to the winning team at the annual Freshman-Sophomore Debate a debating trophy with the name of the class and the year of the debate. This trophy signifies the increasing interest in oratory and research and serves as an incentive for freshman and sophomore achievement in the forensic arts.

## MEDALS

The John Merrick Medal will be awarded to the student completing the four-year mechanical course with the best record in the college department.

The M. F. Spaulding Medal will be awarded to the student completing the full four-year course in agriculture with the best record.

The Saslow's, Inc., Medal will be awarded (a) to the member of the graduating class who completes the four-year course in the School of Education and Sciences with best record, and (b) to the student who graduates with best record in Social Sciences.

## STUDENT LOAN FUND

The A. and T. College Student Aid Fund was established by the Student Council of 1946-47 to provide a source of revenue for loans and grants to deserving students. The revenue is derived from student contributions of \$0.50 per year, faculty members, campus organizations, Alumni donations and other legitimate sources.

Any regular term student duly registered is eligible to apply for aid through this fund.

## SUMMER SCHOOL

*In Point of Continuous Service, the Oldest Summer School  
in the Country for Negroes*

The fifty-first annual summer session of the A. and T. College Summer School will begin June 8, 1953, and continue for eleven weeks, thereby completing a full quarter of college work under the new accelerated plan.

Aside from the splendid opportunity which the Summer School offers teachers-in-service to raise their certificates and thereby obtain better salaries, the College makes it possible for the ambitious teacher to obtain a standard degree by attending the summer school.

College students may shorten their stay in college by attending summer school. Students from other institutions may enter the summer sessions for credit in their respective institutions, by permission from either the president or dean of their respective colleges. Such students will not be required to present a complete record of their previous training, but will be required to present a signed statement from the president or dean indicating the summer courses for which credit will be allowed.

College graduates may use their time in summer school meeting requirements for the Master of Science degree. Persons interested in earning this degree should make application for candidacy early in order that their program may be arranged with this end in view.

### EVENING SCHOOL

The College conducts an evening school for in-service-teachers and others who can qualify for the courses offered. All evening courses are conducted on the same basis as courses that are offered in the regular day classes, and may be applied towards a degree. Admission requirement for the Evening School is the same as for the regular day classes.

### EVENING TRADE CLASSES

The Technical Institute will conduct evening classes in trades and related subjects in any area that ten or more persons request.

The evening classes are intended primarily for those persons who work during the day and desire supplemental training in their chosen fields. In this way it is possible for one to obtain an excellent theoretical training and a practical background at the same time, which, if he has the incentive and ability, should lead to advancement. These courses will vary from elementary to advanced work along technical lines.

These classes will be scheduled for two-hour sessions between the hours of 6:30 and 9:30 in the evening to meet the convenience of the students.

## EXPENSES AND FEES

1953-1954

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Boarding students entering for the first time should be prepared to make the following payments:

	<i>Men</i>	<i>Women</i>
Board (½ month) .....	\$ 11.00	\$ 11.00
Lodging (½ month) .....	5.00	5.00
*Tuition, Fall Quarter .....	43.50	43.50
Laundry .....	2.00	1.00
†College Fees .....	32.00	32.00
College Register and College Annual Fee (Student Pubs.) .....	4.00	4.00
Rental Mailbox .....	1.00	1.00
Dormitory Room Key Deposit .....	1.00	1.00
Library and Laboratory Deposit .....	2.00	2.00
Student Activity Fee .....	2.00	2.00
Student Aid Fund .....	.50	.50
 Total payment first month, September 15, 1953 ..	 \$104.00	 \$103.00

(A deposit of ten dollars must be added to this total by all R.O.T.C. students. See page 203.)

Second payment, due October 1, 1953 .....	\$ 34.00	\$ 33.00
Third payment, due November 1, 1953 .....	34.00	33.00
Fourth payment, due December 1, 1953 through December 21, 1953 .....	28.50	27.50
*Fifth payment, due January 4, 1954 (College Quarterly Fees due) .....	83.50	82.50
Sixth payment, due February 1, 1954 .....	34.00	33.00
Seventh payment, due March 1, 1954 .....	34.00	33.00
*Eighth payment, due April 1, 1954 (College Quarterly Fees due) .....	83.50	82.50
Ninth payment, due May 1, 1954 .....	34.00	33.00
 Grand Total .....	 \$469.50	 \$460.50

### CHANGE IN FEES EFFECTIVE SEPTEMBER 1, 1953

\*An additional out-of-state tuition fee of \$76.50 per quarter will be charged for non-residents of North Carolina.

\*College fees include registration, medical fees<sup>†</sup>, library and lecture fees, for laboratories and classrooms, athletic fee, examination supplies and student identification picture. College fees will now be \$39.00 instead of \$32.00.

<sup>†</sup>Medical fee \$12.00 per annum:

Medical fee pays for the following services:

Medical and Dental Examination, College Physician examination and prescription. Dental Examination service is for emergency treatments, extractions, and relief of pain.

Bed service three (3) days per quarter upon recommendation of College Physician. All time exceeding three (3) days will cost boarding students \$2.00 and off-campus students \$4.00 per day.

Medicine exceeding two (2) issues per month will be \$.50 per issue.

A student boarding and lodging in the city should be prepared to make the following payments:

*Tuition—\$14.50; Custodial Care—\$5.50 (monthly) .....	\$ 20.00
†College Fees .....	32.00
College Register and Annual Fee (Student Publications) .....	4.00
Student Activity Fee .....	2.00
Library and Laboratory Deposit .....	2.00
Student Aid Fund .....	.50
 Total payment first month, September 15, 1953 .....	\$ 60.50
Second payment, due October 1, 1953 .....	\$ 20.00
Third payment, due November 1, 1953 .....	20.00
Fourth payment, due December 1, 1953 .....	20.00
*Fifth payment, due January 4, 1954	
(College Quarterly Fees due) .....	26.00
Sixth payment, due February 1, 1954 .....	20.00
Seventh payment, due March 1, 1954 .....	20.00
*Eighth payment, due April 1, 1954	
(College Quarterly Fees due) .....	26.00
Ninth payment, due May 1, 1954 .....	20.00
 Grand Total .....	\$232.50

Health examinations will be administered to freshmen and other new students September 15, 16 and to upperclassmen September 17, 18. These examinations are prerequisite to registration.

### GRADUATE SCHOOL CHARGES

1. All persons taking 14 hours or more will be charged the customary fees and charges of an undergraduate student.
2. Persons taking 12 hours or less may elect to pay \$5.00 per hour tuition plus the following fees:
  - (a) Library Fee—\$3.00.
  - (b) Course Fee—\$6.00.
  - (c) Library and Laboratory Deposit—\$2.00.
3. First Registration Fee—\$5.00.

### CHANGE IN FEES EFFECTIVE SEPTEMBER 1, 1953

\*An additional out-of-state tuition fee of \$76.50 per quarter will be charged for non-residents of North Carolina.

†College fees include registration, medical fee+, library and lecture fees, for laboratories and classrooms, athletic fee, examination supplies and student identification picture. College fees will now be \$39.00 instead of \$32.00.

+Medical fee \$12.00 per annum:

Medical fee pays for the following services:

Medical and Dental Examination, College Physician examination and prescription relief of pain.

Bed service three (3) days per quarter upon recommendation of College Physician. All time exceeding three (3) days will cost boarding students \$2.00 and off-campus students \$4.00 per day.

Medicine exceeding two (2) issues per month will be \$.50 per issue.

### VACCINATIONS

Each student is required to be vaccinated on entering unless evidence be presented to satisfy the college physician that vaccination is unnecessary.

### OTHER FEES

Rental of cap and gown .....	\$ 3.00
*Certificate fee .....	3.00
Diploma fee .....	5.00
Fee (for each transcript of student's record after the first) .....	1.00
Fine per day for late class registration each quarter .....	1.00
Music (two lessons per week and use of Piano for practice per month) .....	4.00
Practice teaching (other than Vocational Agriculture) .....	25.00
Senior Engineers Inspection Tour Fee .....	50.00

NOTE: All fees and bills are payable in advance. Make all post office money orders, bank drafts and chasier's checks payable to A. and T. College. Personal checks are not accepted unless certified.

### LODGING DEPOSITS

Students should reserve rooms far in advance of the time of arrival by paying the room deposit of five dollars, which will later be credited to their account upon presentation of receipt. If for any reason a student fails to register, the lodging deposit will be refunded, provided application for same is made within ninety days after the appointed day of registration. If application is not made within that time the deposit will be forfeited.

### WORK STUDENTS

Industries operated at the College afford opportunity for a limited number of needy but industrious students to help themselves by working for the College. This will be at a given rate of pay and accredited to their accounts at the end of each month. It is not possible to state definitely and in advance how much a student may earn per month.

### ENTRANCE FEES

Each student must pay in cash all entrance fees and expenses for the first month, when he registers. See page 51 for complete list of fees and expenses.

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\*These fees must be paid not later than February 1 by all persons expecting to complete courses of study during the regular year.

**MONTHLY AND QUARTERLY FEES**

Any student whose bills are not paid on or before the day following the date on which such bills are due will be excluded from all college privileges until such bills are paid.

**LATE FEES**

Each registrant will be required to pay one dollar for each day that he is late after the last day assigned for registration.

**MEDICAL EXAMINATION FEES**

All regularly enrolled students of the College will be required to take a physical examination upon entrance. The College Physician, or some other physician designated by him, will be in charge of all examinations. Day students will be assessed a small fee to cover this and other emergency services.

**AIR AND MILITARY SCIENCE DEPOSIT**

All students taking military training are required to make a deposit of ten dollars for uniforms. This deposit will be refunded when the uniform is returned in good condition. (All freshmen and sopohomores unless excused by the College Physician are required to take military training.)

**SPECIAL NOTICE**

Due to the rising cost of living the Administration reserves the right to raise fees and charges without advance notice should conditions warrant.

F. D. BLUFORD, *President.*

**OUT-OF-STATE STUDENTS**

Non-resident students must pay an out-of-state charge. A non-resident student is one who comes into North Carolina from another state or foreign country for the purpose of attending college.

For this purpose any student whose parents have not lived in this state for more than six months immediately prior to his or her first enrollment in this college will be considered as non-residents, except in the case of:

1. Students twenty-one years of age at the time of their first enrollment, and responsible for their bills, who have resided in North Carolina for more than one year preceding the day of their first registration.

2. Students whose parents are in the United States military or government service and stationed out of state. In both of these cases such students will be regarded as residents.

Students cannot claim a change in resident status after they have enrolled. Those misrepresenting themselves in this respect in order to avoid paying out-of-state fee will be subject to disciplinary action by the college.

#### **SELF-HELP**

The institution cannot guarantee jobs to students who expect to work their way through college. Many students find work in private families and in other occupations, by means of which they defray a portion of their expenses. A person of ability and energy who can do work of any kind can generally find employment, but prospective students are cautioned against depending upon such unreliable sources of income.

# INSTITUTIONAL ORGANIZATION

## SCHOOL OF AGRICULTURE

WILLIAM E. REED, *Dean*

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The School of Agriculture is organized into the following departments: (1) Agricultural Education—agricultural education, agricultural and home economics extension; (2) Agricultural Economics—agricultural economics, and rural sociology; (3) Animal Industry—animal husbandry, dairy husbandry, and poultry husbandry; (4) Biology—bacteriology, botany, general science, and zoology; (5) Chemistry—biochemistry, and chemistry; (6) Home Economics—child development and family relationship, clothing, textiles and related art, food and nutrition, and home administration, home economics education, and nursery school education; (7) Plant Industry—agricultural engineering, field crops, forestry, fruits and vegetable production, geology, ornamental horticulture, and soils; (8) Associated Departments, consisting of state subject-matter, supervisory and administrative personnel of Agricultural and Home Economics Extension Service; and (9) Vocational Agriculture.

The School of Agriculture offers students four-year programs of study leading to the degree of Bachelor of Science. These courses of study are designed to give not only scientific, technical, and practical training in the several specialized fields, but also provide for the development of a broad educational and cultural background which fits the student for more varied fields of endeavor.

In agriculture the degree of Bachelor of Science is offered in the following:

1. Agricultural Biochemistry
2. Agricultural Education
3. Agricultural Engineering
4. Agricultural Marketing
5. Agronomy
6. Animal Husbandry
7. Dairy Husbandry
8. Farm Management
9. General Agricultural Economics
10. Horticulture
11. Poultry Husbandry
12. Ornamental Horticulture

In home economics the degree of Bachelor of Science is offered in the following:

1. Clothing
2. Home Economics Education
3. Institutional Management
4. Nursery School Education

For those students who do not plan to remain in college for a four-year period, two-year terminal programs leading to a certificate are offered in poultry husbandry, animal husbandry, dressmaking, and cafeteria management. Considerable flexibility is allowed in these two-year programs so as to meet the varied needs and interests of the students. These programs are designed for those who wish to prepare for productive enterprises and services.

All students who pursue programs of study in agriculture leading to the degree of Bachelor of Science should follow the Basic Curriculum in Agriculture for the freshman and sophomore years.

All students who pursue programs of study in home economics leading to the degree of Bachelor of Science should follow the Basic Curriculum in Home Economics for the freshman and sophomore years.

In the last quarter of the sophomore year the student should elect his major and, at this time, work out a complete program of study for his junior and senior years in conference with the Head of the Department of his major field. With the approval of the Dean of the School of Agriculture this program constitutes the student's requirements for graduation.

Normally a minimum of 30 quarter hours will be required for a major in any subject matter area, plus an additional 15 quarter hours in closely related courses. A minimum of 200 quarter hours of credit and a grade point average of 1 is required for graduation.

Students who plan to do graduate work in such specialized areas as soil science, veterinary medicine, nutrition and entomology will be permitted to pursue a program of study which includes courses designed to develop a sound scientific background.

The School of Agriculture offers a two-year pre-veterinary curriculum which meets the requirements for admission to schools of veterinary medicine as recommended by the American Association of Veterinary Medicine.

This program includes basic courses which are more than adequate for admission to most of the veterinary schools.

Since there is no School of Veterinary Medicine in North Carolina, the State has provided funds that will permit a limited number of students each year to receive training in veterinary medicine at an approved institution without having to pay out-of-state tuition fees normally charged students who are not residents of that state.

The Agricultural and Technical College of North Carolina has been designated to pass on the educational qualifications of all Negro students in North Carolina who apply to a School of Veterinary Medicine under this plan.

### BASIC CURRICULUM IN AGRICULTURE

#### Freshman

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212, 213 .....	5 (5-0)	5 (5-0)	5 (5-0)
Geology 111 .....	4 (3-2)	.....	.....
Mathematics 311, 312 .....	5 (5-0)	5 (5-0)	.....
Animal Husbandry 111 .....	3 (2-2)	.....	.....
Botany 111 .....	.....	5 (3-4)	.....
Zoology 111 .....	.....	.....	5 (3-4)
Physics 311 .....	.....	.....	5 (3-4)
Poultry Husbandry 111 .....	.....	3 (3-4)	.....
Field Crops 111 .....	.....	.....	3 (2-2)
Air or Military Science 211, 212, 213 .....	2 (3-2)	2 (3-2)	2 (3-2)
Physical Education 210a, 210b, 210c .....	1 (0-2)	1 (0-2)	1 (0-2)
	20	21	21

#### Sophomore

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113 .....	5 (3-4)	5 (3-4)	5 (3-4)
Animal Husbandry 122 .....	3 (2-2)	.....	.....
Agricultural Engineering 111, 122 .....	3 (1-4)	3 (2-2)	.....
Poultry Husbandry 112 .....	3 (2-2)	.....	.....
Horticulture 111 .....	.....	.....	3 (2-2)
Ornamental Horticulture 112 .....	.....	3 (2-2)	.....
Field Crops 121 .....	.....	3 (2-2)	.....
Economics 231 .....	.....	.....	5 (5-0)
Soils 123 .....	.....	.....	4 (2-4)
Air or Military Science 221, 222, 223 .....	2 (3-2)	2 (3-2)	2 (3-2)
Physical Education 220a, 220b, 220c .....	1 (0-2)	1 (0-2)	1 (0-2)
	17	17	20

### BASIC CURRICULUM IN HOME ECONOMICS

<i>Freshmen</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212, 213 .....	5 (5-0)	5 (5-0)	5 (5-0)
Chemistry 111, 112 .....	5 (3-4)	5 (3-4)	5 (3-4)
Art 314 .....	2 (2-0)	.....	.....
C. T. R. A. 110, 112, 113 .....	2 (1-2)	3 (1-4)	4 (1-6)
C. D. F. R. 111, 115 .....	2 (2-0)	3 (3-0)	.....
Home Administration 112 .....	.....	.....	3 (3-0)
Physical Education 210a, 210b, 210c .....	1 (0-2)	1 (0-2)	1 (0-2)
	17	17	18

<i>Sophomore</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 224 .....	3 (2-2)	.....	.....
Foods and Nutrition 121, 123, 125 .....	5 (3-4)	4 (3-2)	5 (3-4)
Zoology 121 .....	5 (3-4)	.....	.....
Physics 311 .....	.....	5 (4-2)	.....
Education 221 .....	5 (5-0)	.....	.....
C. D. F. R. 113, 121 .....	.....	3 (3-0)	4 (3-2)
C. T. R. A. (to be elected) .....	.....	3-5	.....
Home Administration 123, 134 .....	.....	.....	3 (3-0)
Physical Education 220a, 220b, 220c .....	1 (0-2)	1 (0-2)	1 (0-2)
Elective .....	.....	.....	3-5
	—	—	—
	19	16-18	16-18

**TWO-YEAR PRE-VETERINARY MEDICINE CURRICULUM***First Year*

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212, 213 .....	5 (5-0)	5 (5-0)	5 (5-0)
Math 311 .....	5 (5-0)	.....	.....
Botany 111 .....	5 (3-4)	.....	.....
Zoology 111, 112 .....	.....	5 (3-4)	5 (3-4)
Chemistry 111, 112 .....	.....	5 (3-4)	5 (3-4)
Air or Military Science 211, 212, 213 .....	2 (3-2)	2 (3-2)	2 (3-2)
Physical Education 210a, 210b, 210c .....	1 (0-2)	1 (0-2)	1 (0-2)
	—	—	—
	18	18	18

*Second Year*

Chemistry 113, or 121, 131 .....	5 (3-4)	5 (3-4)	.....
Physics 311, 312 .....	.....	5 (3-4)	5 (3-4)
Zoology 123, 143 .....	5 (3-4)	4 (2-4)	.....
English 224 .....	.....	.....	3 (2-2)
Animal Husbandry 111, 122 .....	3 (2-2)	3 (2-2)	.....
Zoology 142 .....	.....	.....	3 (3-0)
Poultry Husbandry 111 .....	3 (2-2)	.....	.....
Economics 231 .....	.....	.....	5 (5-0)
Air or Military Science 221, 222, 223 .....	2 (3-2)	2 (3-2)	2 (3-2)
Physical Education 220a, 220b, 220c .....	1 (0-2)	1 (0-2)	1 (0-2)
	—	—	—
	19	20	19

# THE SCHOOL OF EDUCATION AND SCIENCE

WARMOTH T. GIBBS, *Dean*

The School of Education and Science offers to the student opportunity to prepare either for teaching or for any one of several distinct vocational and professional pursuits. The courses are so constructed that the student, although specializing, may also come in contact with subjects that possess wide cultural value and insure that broader outlook upon life which characterizes the educated man or woman. This school also offers professional courses in subjects required by the State Board of Education for the Standard "A" grade teaching certificate.

This School includes the following fields of study: air science, economics, education, English, foreign languages, general science, military science and music, physical education and the social sciences as well as subjects required for completion of the pre-medical and pre-law courses.

## REQUIREMENTS FOR ADMISSION

Admission requirements to the School of Education and Science are the same as those given for entrance to the Freshman Class. See page 33.

## GRADUATION REQUIREMENTS

A minimum of 200 credit hours and 200 grade points is required for graduation.

In addition to majors and minors, each candidate for graduation will be required to meet the following distribution requirements both as to subjects and hours:

†1. Foreign language, 10 hours for those who present two admission units of high school credit in the same language, and who pass the placement test in same, others 15 hours.

\*2. Mathematics, 10 hours.

3. English composition, 15 hours; and literature (English or American) 5 hours.

4. Science: 10 hours of chemistry or physics and 10 hours of biological sciences.

5. Social Science; History: of the Negro, of America, of Civilization, 5 hours of each; 15 hours, total.  
tion\*\*, 5 hours of each; 15 hours, total.

6. Music and art appreciation, 9 hours for those planning to teach; others 6 hours.

\*Persons holding a satisfactory State teachers' certificate may substitute general science for mathematics.

†Foreign language is elective in the field of Physical Education.

\*\*An additional course in the social studies may be taken in lieu of history of civilization.

7. R.O.T.C., 12 hours.
8. Health and physical education, 9 hours for those planning to teach; others 6 hours.
9. Orientation, 1 hour.
10. Vocations, 6 to 10 hours.
11. Research, 3 hours.

The graduation requirements may be further classified under the following heads:

1. Required freshman-sophomore courses. These are the general college courses required in the School of Education and Science to be completed before advancing to major work.

2. Major and Minor courses. Each student is required to select a major and a minor and complete a concentration in each. This will be selected at the end of sophomore year and completed during the junior and senior years.

3. Electives. The number of hours required for a major or a minor varies from department to department, but where a student has completed his required freshman-sophomore courses, his major and minor, and is still short of the two hundred hours required for graduation, he must complete a number of elective courses and hours sufficient to make up the deficiency.

4. Research Project. Each student taking a degree in the School of Education and Science will be required to complete an independent research project of his own choice. This will be taken during the senior year.

All of the above mentioned requirements will be adhered to rigorously. Students are urged therefore to familiarize themselves with them early in their college career and follow them consistently in making out their schedules from quarter to quarter. Students should realize that while faculty advisers will be available and willing to assist them in adjusting curriculum and schedule problems, each student, not the adviser, is responsible for the execution of his own program of study.

#### **REQUIRED COURSES FOR FRESHMEN AND SOPHOMORES**

	<i>Hours</i>
English 211, 212, 213 .....	15
English 220, 221, or 223 .....	5
Foreign language (one language) .....	10-15
Mathematics 311, 312 .....	10
History 210, 213; 221 or 222 .....	15
Chemistry 111, 112 or Physics 311, 312 .....	10
Biological Science (Botany 111, Zoology 111) .....	10
Music and Art Appreciation .....	6- 9
R.O.T.C. 211, 212, 213, 221, 222, 223 (for men) .....	12
Physical Education, six quarters .....	6- 9
Orientation (Ed. 211) .....	1
Vocations .....	6-10

## SAMPLE SCHEDULE

The following are typical examples of how normal schedules might be arranged. Others more in accord with the student's interest and aptitudes might be selected:

### Freshman

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 211, 212, 213 .....	5 (5-0)	5 (5-0)	5 (5-0)
Math. 311, 312 .....	5 (5-0)	5 (5-0)	.....
French or Spanish 211, 212, 213 .....	5 (5-0)	5 (5-0)	5 (5-0)
Ed. 211 .....	1 (1-0)	.....	.....
ROTC 211, 212, 213 .....	2 (2-2)	2 (2-2)	2 (2-2)
Physical Education .....	1 (0-2)	1 (0-2)	1 (0-2)
Mus. 211, 212, 213 or Art 314, 315, 316 .....	2 (2-0)	2 (2-0)	2 (2-0)
Vocations .....	3 (0-6)	3 (0-6)	3 (0-6)
	<hr/>	<hr/>	<hr/>
	19	19	19

### Sophomore

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Eng. 223, 220, 221 .....	5 (5-0)	5 (5-0)	5 (5-0)
Chem. 111, 112, or Phy. 311, 312 .....	5 (3-4)	5 (3-4)	.....
Bot. 111 .....	5 (3-4)	.....	.....
Zool. 111 .....	.....	5 (3-4)	.....
Math. 313 .....	.....	.....	5 (5-0)
ROTC 221, 222, 223 .....	2 (3-2)	2 (3-2)	2 (3-2)
Physical Education .....	1 (0-2)	1 (0-2)	1 (0-2)
Mus. 221, 222, 223, or Art 327, 328, 329 ..	2 (2-0)	2 (2-0)	2 (2-0)
History .....	.....	5 (5-0)	5 (5-0)
Education 221 .....	.....	.....	5 (5-0)
French or Spanish .....	5 (5-0)	.....	.....
	<hr/>	<hr/>	<hr/>
	19	19	19

### MAJORS AND MINORS

A student upon entering his third year is expected to concentrate in two definite fields of study. In arranging his work he must conform to the following regulations: (1) At least forty-five hours of the total number required for graduation must be chosen from a particular subject or field, in which he must maintain a grade point average of 1.5 or more. This will constitute the student's major group. (2) At least 30 hours must be chosen from another subject or field, in which he must maintain a grade point average of 1.0 or more.\* This will constitute

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\*Fifty hours are required for a major in English; forty hours for a minor.

his minor group. The major should represent the student's principal field of interest and the minor, his second field. Persons preparing to teach are advised to complete majors in two fields.

No student is permitted to major or minor in a subject until he has filled out and turned in to the dean of the School of Education and Science the special application form for majors and minors and has, thereby, received the written approval of the heads of the two subject-matter departments in which he proposes to concentrate; that is, the department of his major and minor, or of his two major fields.

Students must realize that the requirements for a state teaching certificate are set up and administered by the State Department of Public Instruction and not by the college. While the completion of a college major ordinarily carries with it more courses and credits than are needed for meeting the requirements for certification, those students planning to qualify for a teaching certificate should consult the requirements of their respective states and take care to see that the courses needed for same are included. This is equally important for those desiring certification in the minor field also. They should include these requirements as they make out their program from quarter to quarter.

The following are suggested as fields for major study in this School:

1. Biological Science.
2. Chemistry or Physics.
3. English.
4. Mathematics.
5. Modern Languages.
6. Music.
7. Physical Education.
8. The Social Sciences.

For a minor a student may elect Art, Air Science, Health Education, Military Science, Business or any of the fields mentioned above.

### ELECTIVES

In addition to minimum distribution requirements, and a major and a minor, which are required, each student is permitted to elect such additional courses as will be necessary to satisfy the graduation requirements; in so doing he is urged to exercise the greatest care in order that his choice may add further to the integration and coordination of his program. All such electives must be made with the approval of the student's adviser.

The elective work may be taken in any of the departments indicated previously or from any other department of the institution subject to the approval of the Dean of the School of Education and Science.

Students are urged to elect courses in accordance with a definite plan, and with a definite object in view. Those looking forward to teaching or working in small towns or rural districts especially should bear in mind that the number of trained workers in any given department is likely to be small and the facilities limited. They should therefore use their choice of electives in acquiring knowledge or skills that will be of immediate use to them in such communities. Courses in general agriculture, animal husbandry, commercial industries, industrial arts, foods and clothing may prove to be the most beneficial as electives for such students. These are strongly recommended as electives for such teachers and workers.

### SENIOR RESEARCH RULES

A candidate for the bachelor's degree in the School of Education and Science must satisfactorily complete a senior research project as part of the graduation requirement. This project may be written in the candidate's major or minor field, and the student may chose any instructor in the field in which he is writing the paper as his adviser. This adviser will automatically become a member of the senior research committee, the chairman of which is the instructor in charge of the research course (Research 246). The candidate is responsible both to his adviser and then to the chairman of the Senior Research Committee.

At the discretion of the instructor of Research 246, students who are candidates for graduation with honors or who for any other reason are capable of or willing to undertake a thesis of greater scope and higher caliber than required for other projects will be expected to have same typed and bound. It must be signed by the candidate's adviser, the Chairman of the Senior Research Committee, and the Dean of the School of Education and Sciences. It becomes the property of the College Library.

Each candidate is required to take the research course at least one quarter preceding the quarter in which he expects to graduate. Thus, students wishing to graduate in the spring must take the course not later than the Winter Quarter; those wishing to graduate in August may wait until the Spring Quarter preceding graduation.

The student is required to finish the research project by the end of the quarter in which he is taking Research 246. If, however, circumstances over which he has no control prevent him from completing the project in that time, it must, nevertheless, be completed on or before May 15 in the case of persons expecting to graduate in the spring. If a candidate for graduation in August is unavoidably prevented from completing his paper while taking the course, he must finish it two weeks before the date of graduation.

## COURSES PRELIMINARY TO ADMISSION TO MEDICAL COLLEGE

This institution has been rated as class "A" by the American Medical Association as to qualifications for giving pre-medical-training. Students completing the prescribed course will be required to pass the national medical school admission test and the graduate record examination.

All students planning to study medicine are urged, therefore, to complete the four-year course and receive their degree before entering a medical school.

### PRE-MEDICAL COURSE

Students are advised to select subjects in college which assure a broad background for later medical study rather than merely confirming themselves to courses and fields required in the medical curriculum. Electives should include psychology, political science, history, economics, sociology, and mathematics.

The following represent the minimum requirements in general for admission to class "A" Medical Schools:

	<i>Quarter Hours</i>
*Chemistry (inorganic) .....	15
Chemistry (organic) .....	10
Physics .....	15
Biology .....	12
English (composition and literature) .....	15
A modern foreign language (a reading knowledge) .....	12
Electives .....	10-18

### OPPORTUNITIES FOR WOMEN

All courses in the College are open to women on the same basis as men. There is a great demand for well-trained women not only as teachers but in practically all fields of endeavor. Accordingly, women registering in the teacher training division may, with approval of their advisers, select courses in any other division or department of the institution.

The aim of this division is to give the women as well as the men every opportunity to take full advantage of all the facilities of the College in developing the best and most comprehensive education possible.

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\*Pre-medical students and majors or minors in Chemistry should register for Chemistry 111, 112, and 113 in successive quarters.

## SCHOOL OF ENGINEERING

J. M. MARTEENA, *Dean*

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The organization of the School of Engineering includes, for the purpose of administration, the Department of Architectural Engineering, Electrical Engineering, Mechanical Engineering, Engineering Mathematics, Engineering Physics, Business, Fine Arts and Industrial Education. This organization enables the school to offer vocational, scientific and engineering instruction to help prepare the students to meet the needs of the people, industry and the various technical and professional fields.

The curricula offered include four-year courses of study leading to the Bachelor of Science Degree and professional courses in subjects required by the State Board of Education to qualify for the standard "A" grade teaching certificate in many fields.

The Department of Industrial Education offers curricula in Industrial Arts and Vocational Industrial Education with majors in Auto Mechanics, Cabinet Making, Carpentry, Machine Shop, Masonry, Plumbing, Radio and Television, Shoe Repairing, Tailoring and Welding.

In keeping pace with the increasing demands of industry, society and progressive education the school is rapidly improving its staff and expanding its facilities and physical plant.

### ADMISSION TO THE SCHOOL OF ENGINEERING

The admission requirements are generally the same as those given for entrance to the freshman class. One year of algebra and one year of plane geometry are required for students electing a curriculum leading to a B.S. degree. Students admitted with conditions in any subjects will be required to remove them during their freshman year.

Students electing an engineering curriculum are required to have credit in Solid Geometry in addition to the above requirements.

### ADVANCED STANDING

Students who have attended college of approved standing will be given appropriate credit for work completed there, upon the presentation of the proper certificate to the Registrar, who will determine the credits for the curriculum which the student wishes to take.

## REQUIREMENTS FOR GRADUATION

The requirements for graduation in any division of the School of Engineering are the satisfactory completion of all courses in one of the prescribed curricula.

### OUTLINE OF THE FIRST YEAR'S WORK OF ALL FOUR-YEAR CURRICULA

In order to permit all students in the School of Engineering to find out definitely what courses they desire to pursue the first year of all four-year curricula is made uniform.

An inspection trip to visit such industrial installations as a hydro-electric plant, a turbo-electric plant, a steel or aluminum manufacturing and fabrication plant, outstanding construction projects, etc., will be required for graduation in all curricula of engineering.

The inspection trip will be planned by the heads of the various departments of engineering for senior students and will take place during the Winter quarter of each year.

A fee of fifty (\$50.00) dollars will be charged all senior students in engineering to cover expenses for this trip.

#### Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113*	5 (3-4)	5 (3-4)	5 (3-4)
Mathematics 311, 312, 313‡	5 (5-0)	5 (5-0)	5 (5-0)
English 211, 212, 213	5 (5-0)	5 (5-0)	5 (5-0)
Mechanical Drawing, M.E. 311, 312	3 (0-6)	3 (0-6)	.....
Descriptive Geometry, M.E. 314	.....	.....	3 (1-4)
Military or Air Science, 211, 212, 213	2 (2-2)	2 (2-2)	2 (2-2)
	<hr/> 20	<hr/> 20	<hr/> 20

\*Students in Fine Arts and Industrial Education are not required to take Chemistry 113. Students in Industrial Education will take I.A. 341 and music in their Freshman year.

†Students in Fine Arts may substitute History 213 for Math 313 and Art 320 for Chemistry in the Spring Quarter.

## **GRADUATE SCHOOL**

**F. A. WILLIAMS, Dean**

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The Agricultural and Technical College of North Carolina is a Land-Grant institution. Consequently as would be expected its Graduate School offers to qualified students the opportunity to pursue and to undertake research in the areas of functional education as related to agriculture, technology, applied sciences and allied areas of study.

The immediate aims of the graduate program differ from those of undergraduate study. Hence, the college seeks to enable graduate students (1) to broaden their knowledge of a given area of study, (2) to increase their competence in a chosen area of study, (3) to develop power and interest in self-improvement, (4) to become imbued with a true spirit of research, and (5) to become widely read in those fields related to their area of study.

In order to accomplish these aims the college desires to provide instruction and research to as wide a constituency as possible.

The office of the Graduate School is located in Room 103, Noble Hall. The office is open from 8:30 a.m. to 5:00 p.m. daily, except Saturday. On Saturday, it is open from 8:00 to 12:00 m.

All communications and inquiries regarding matters connected with the Graduate School, whether from prospective students or from those whose work is in progress, should be directed to the Office of the Graduate School and/or the College Registrar.

### **GRADUATE OFFERINGS**

The college was authorized by the North Carolina Legislature in 1939 to offer to qualified graduate students the opportunity to pursue graduate work in agriculture, technical and applied sciences. The courses offered in these areas at the present lead to both the Master of Science degree and a Master's teaching certificate in agricultural education, industrial arts education, counselor education, and rural education at the elementary and secondary levels. In addition to these regularly established programs of graduate studies, other specialties in agriculture, technical and applied sciences may be pursued with the approval of the Graduate School.

### **ORGANIZATION**

The Graduate School is under the administration of the Dean of the Graduate School, the Graduate Council, the Thesis Committee, and Examining Committees. The reports of these committees are subject to the approval of the College Council which is the policy making body of the college with the approval of the Board of Trustees.

## ADMISSION

An applicant from the Agricultural and Technical College of North Carolina or from an accredited college or university requiring substantially the same undergraduate program as is required at this college, may be admitted to full graduate standing pending approval for candidacy. The applicant's undergraduate grades should be above average.

A student with relatively low grades on his undergraduate record from any institution will be assessed an entrance penalty of from six to nine quarter hours. Application for admission to graduate standing and two transcripts of the applicant's undergraduate record must be submitted to and approved by the Registrar in advance of registration. Admission to graduate standing does not admit a student either to a particular major or to candidacy for the Master's degree.

*Full Standing:* For admission to graduate study in full standing the applicant must meet the following requirements:

1. Graduation from an institution whose requirements for the bachelor's degree are substantially equivalent to those of the Agricultural and Technical College.
2. An undergraduate grade average of "B" in the junior and senior years.
3. Undergraduate training in the subject matter of the field, in which the applicant expects to take graduate work, substantially equivalent to the requirement for undergraduate students in the same field at this College. This will be construed to mean that training in closely related or supporting subjects must also be adequate to carry on advanced study in the field of the applicant's choice.

*Provisional or Temporary Standings:* The applicant who does not meet all the requirements for admission to full standing in the Graduate School may be admitted to provisional or temporary standing. Such admission will be based on written application, setting forth the circumstances involved, and with the approval of the College Registrar and the Dean of the Graduate School. The student will be advised of any deficiencies or other conditions to be met to attain full standing.

The student admitted to provisional or temporary standing shall be admitted to full standing upon meeting the following requirements:

1. The completion of at least 15 hours of work for graduate credit with a grade of B or better in three-fourths of such graduate work.
2. The removal of any course or subject-matter deficiencies which were specified at the time of his admission to Provisional Standing in the Graduate School.

Admission to graduate study does not imply admission to candidacy for an advanced degree. Such candidacy is determined after the student has demonstrated that he has ability to do work of graduate quality as shown in the passing of a qualifying examination.

### VETERAN'S ADMISSION

The United States Veterans Administration has approved the Agricultural and Technical College of North Carolina as an institution for training under Public Law 16—Vocational Rehabilitation Act and Public Law 346—the Service Men's Readjustment Act of 1944 (G. I. Bill of Rights) and Public Law 550. The College, accordingly, encourages the enrollment of Veterans and offers its facilities to those qualified for attendance to the full extent of its accommodations in its Graduate School. The rules for admission and continued registration for demobilized students are, in general, the same as those operative for other students.

### REGISTRATION AND ASSIGNMENT

Students who have been admitted to full-time graduate study, register, obtain their assignments from the Dean of the Graduate School, and pay their fees during the regular registration periods.

Not more than fifteen quarter hours, including research, may be assigned in a single quarter, nor more than nine quarter hours during a single summer session. An in-service or part-time student follows the same procedure as a full-time student.

### REQUIREMENTS FOR THE MASTER'S DEGREE

The requirements for the Master's degree are:

- (1) Forty-five (45) quarter hours including three (3) hours for a thesis.
- (2) The successfully passing of a qualifying examination.
- (3) Approval of a proposed thesis.
- (4) A cumulative average of two or more grade points.
- (5) Passing of a final examination in subject matter and thesis.
- (6) Preparation of an abstract of the thesis.
- (7) A minimum residence of one year.

*Residence Requirements:* The minimum requirements of candidates for the Master's degree is one academic year. Most times a longer period of residence will prove necessary.

Not more than six quarter hours of credit toward the Master's degree may be allowed for acceptable graduate work completed elsewhere. Such credit cannot therefore shorten the minimum period of full-time residence work required at the Agricultural and Technical College of North Carolina. The Graduate School conducts regular classes in the evenings and on Saturdays for which graduate credit is granted.

All work offered for the Master's degree, whether in the regular academic year or in the Summer Session, must be completed within a period of six years from the time the graduate program is started.

*Program of Study:* At the time of admission to the Graduate School the student, on the advice of the Dean, may be assigned to an adviser who advises him throughout his course. This assignment is usually made after the student has successfully passed the qualifying examination. The choice of an adviser is largely determined by the student's choice of a major subject or field.

The program of study may consist of courses chosen from one department or it may include such cognate courses from other departments as may in individual instances seem to offer greatest immediate and permanent values.

Under ordinary circumstances graduate programs, including electives or undergraduate courses, are limited to 15 hours for any one quarter.

*Admission to Candidacy:* To become admitted to candidacy for a degree, a student must have been unconditionally admitted to graduate standing, and must have been approved by his adviser and the Dean of the Graduate School for his particular area of study. Candidacy is based on an examination of the student's undergraduate record, and the passing of a qualifying examination. The minimum prerequisite is 15 quarter hours over and above any entrance deficiencies or penalties. All arrangements and agreements are tentative until the student has been admitted to candidacy for a degree.

*Thesis:* The Master's thesis is intended to demonstrate the student's ability to discover a problem, collect, arrange, interpret and report pertinent data or material on a special problem. A publishable contribution is highly desirable. The thesis is expected to exhibit insight into the thesorial problem and competence in the use of appropriate English, and scholarly methods.

*Abstract:* A candidate for the Master's degree is required to prepare an abstract of the thesis to the final examination before being admitted. The abstract should not be more than five hundred (500) words in length.

## EXAMINATIONS

*Course Examinations:* Final examinations are administered at the close of each quarter or summer session.

*Qualifying Examinations:* On the completion of fifteen (15) quarter hours of graduate work, a graduate student is required to take a qualifying examination which includes:

- a. An appraisal of the prospective candidate's college record.
- b. An examination of the student's graduate work.
- c. A 200-word, or more, written composition on some assigned subject. This is done one-half hour before the oral examination is administered.

- d. An oral examination for at least one hour, which usually includes:
  1. Questions on general education.
  2. Questions on educational methods and procedures.
  3. Questions on the student's subject matter specialty including his specific subject matter and educational areas.
  4. Questions on current socio-economic problems and current literature in the prospective candidate's field of study.
  5. Questions which will demonstrate the student's ability to do creative or reflective thinking.

*Final Oral Examinations:* Candidates for the Master's degree are required to appear before an examining committee and exhibit their fitness to receive a Master's degree for a period of two hours in length. This examination will cover the candidate's thesis and major field.

#### NON-DEGREE ENROLLMENT

Graduate work may be taken by students who are not candidates for a Master's degree. Such enrollment permits the special privilege of a wider range in the selection of subjects. The courses selected should, however, bear an appropriate relation to one another. A statement of the subjects must be submitted to the Dean of the Graduate School. Admission for such study is based upon the same requirements as prospective candidates for the Master's degree.

#### GRADING SYSTEM

The work of graduate students performed in connection with research work and the thesis should be reported as "P" indicating progress until the work has been completed when a final grade is assigned. All other work is reported as "A" Excellent, "B" Average, and "C" Below Average. A grade below "C" is not accepted for graduate credit. A grade of "C" may be compensated by earning an "A" in another course. Should a candidate receive more than three grades below "B" the Dean of the Graduate School may request that the student discontinue graduate work.

#### WITHDRAWAL FROM THE COLLEGE

A graduate student who desires to withdraw from the College must apply to the Dean of the Graduate School for permission to withdraw in good standing. If the student leaves the College at any time during the Quarter, without communicating with the Dean, he will be marked as having failed in all of his courses for the Quarter. No withdrawal from the College will be permitted after two weeks prior to the beginning of final examinations.

The written permission of the Dean shall be filed with the Registrar at once by the student in order that the proper entry may be made upon the College record.

## COLLEGE SENIORS

Regularly enrolled seniors who lack not more than six quarter hours to meet requirements for graduation may register for additional courses to complete a normal schedule, in the Graduate School. Such additional courses may be counted towards the Master's Degree, after the Bachelor's Degree has been granted, but they will not be counted for meeting requirements for both the Bachelor's and the Master's Degree.

## COLLEGE STAFF AND GRADUATE WORK

Full-time members of the college staff with the president's approval may be permitted to register for not more than three hours, or one course, per quarter in the Graduate School, provided such would not interfere with their regular College duties.

## RESPONSIBILITY OF GRADUATE STUDENTS

The responsibility of course enrollment rests entirely upon the student. He should read the regulations carefully, and should follow them in all matters.

Members of the faculty are always ready to advise students and assist in planning their study program, but they are not responsible for enforcing the regulations of the Graduate School.

## GRADUATE COURSES DURING THE SUMMER

The College offers opportunities to pursue regular graduate courses leading toward the Master's degree during the summer in connection with the Summer School. Details regarding courses offered, facilities for study, environment, etc., may be found in the Summer School Catalogue, a copy of which is available upon request to the Director of the Summer School.

## TUITION AND FEES

*Full-time Graduate Students:* Full-time graduate students pay the same fees as undergraduate students.

*Part-time Graduate Students:* Part-time graduate students pursuing less than 12 hours pay \$5.00 per hour credit in addition to the following fees:

- (a) Library fee—\$3.00 plus a \$2.00 refundable fee.  
(Total—\$5.00).
- (b) Course fee—\$6.00.
- (c) First matriculating fee—\$5.00.

All fees are subject to change.

A late registration fee of \$3.00 is assessed against a full-time graduate student who registers after the close of the regular period of registration. The same fee is charged part-time graduate students who register after the second day set for their registration.

*Commencement Fees:* Before receiving a Master's degree, students must pay a commencement fee of \$31.50 to cover cost of diploma, thesis binding, and other commencement expenses, including rental fees for cap, gown and hood. This fee should be paid in February prior to the date the degree is expected to be conferred.

## HOUSING

The college provides housing accommodations for a limited number of graduate students. Information on housing for female students will be furnished by the Dean of Women. Requests for information on housing for male students should be directed to the Dean of Men.

Mature graduate students are able to obtain rooms at a reasonable rate in private homes relatively near the college. Prospective graduate students who are married and desire housing should contact either the Deans of Men and Women or the Graduate Office.

## COURSE ANNOUNCEMENTS

The quarter in which a course is to be offered will be found in the regular college schedule of courses. The college reserves the right to discontinue any course for which the registration is not sufficiently large. As would be expected, at the graduate level, student demands frequently make it necessary to vary course offerings made in advance.

## GRADUATE CERTIFICATION REQUIREMENTS AT THE MASTER'S LEVEL

The North Carolina State Department of Public Instruction has issued the following requirements to be followed by those who desire to obtain a Master's degree and also a state graduate teaching certificate. A summary of these requirements follows:

### I. Graduate Teacher's Certificate In Agricultural Education:

- A. Hold or be qualified to hold the Class A teacher's certificate in Secondary Agricultural Education.
- B. Have at least three years' teaching experience.
- C. Have a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction.

**D. The distribution of the Course work will include:**

1. General Education ..... 9 quarter hours
2. Agricultural Education ..... 15 quarter hours
3. Technical Agriculture ..... 18 quarter hours  
(Including Agronomy, Horticulture, Poultry, etc.)
4. Thesis ..... 3 quarter hours

**II. Graduate Teacher's Certificate In Industrial Arts Education:****1. Required courses**

- |  |                |
|--|----------------|
| Ed. 601 Theory of American Public Ed. .... | Credit 3 (3-0) |
| Ed. 605 Teaching Principles .....          | Credit 3 (3-0) |
| Ed. 606 The Curriculum .....               | Credit 3 (3-0) |
| Ed. 621 Educational Psychology .....       | Credit 3 (3-0) |

- \*2. Subject-matter courses according to certificate ..... 18 Q. H.  
3. Electives and Thesis ..... 15 Q. H.

**\*Subject-Matter Courses in Industrial Arts Education:**

- |  |
|--|
| Ind. Arts 608, 609, 610. Comprehensive Shop Problems   |
| Ind. Arts. 611, 612, 613. Problems in Industrial Arts  |
| Ind. Arts 624 Laboratory Planning for Industrial Shops |

**III. Graduate Secondary Teacher's Certificate**

- A. Hold or be qualified to hold the Class A high school teacher's certificate.
- B. Have three or more years' teaching experience.
- C. Have a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction. This would include:
  1. Subject matter in the certificate fields.... 18 quarter hours
  2. Education (philosophy, principles, curriculum, psychology, etc.) ..... 9 quarter hours
  3. Electives and Thesis ..... 18 quarter hours

**IV. Graduate Elementary Certificate:**

- A. Hold or be qualified to hold the Class A primary or grammar grade certificate.
- B. Have three or more years' teaching experience.

- C. Have a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction. This credit would include:
1. Academic work ..... 9-18 quarter hours  
This should include subject matter in those fields in which there are manifest weaknesses in the equipment of the individual, as well as subject matter that would strengthen points already strong.
  2. Education (philosophy, principles, curriculum psychology, etc.) ..... 9 quarter hours
  3. Electives and Thesis ..... 18-24 quarter hours

Requirements for Principal's Certificate, effective as of July 1, 1943:

- A. Hold or be qualified to hold the Class A teacher's certificate (secondary or elementary).
- B. Have three years' teaching experience within the past five years.
- C. Hold a Master's degree from an institution of higher learning with recognized graduate standards approved by the State Department of Public Instruction.
- D. Have credit for a minimum of 12 semester hours (18 recommended) of graduate work in Education selected from the following areas:
  1. Fundamental Bases of Education
    - a. The Curriculum, at least 2 semester hours required
    - b. Human Growth and Development
    - c. Social Foundations of Education
  2. Instructional and Supervisory Techniques
    - a. Principles of Supervision, at least 2 semester hours required
    - b. Teaching Procedures
    - c. Guidance and Pupil Personnel and Accounting
    - d. Measurements
  3. Organization and Administration
    - a. High School Administration, at least 2 semester hours required
    - b. Elementary School Administration, at least 2 semester hours required
    - c. General Administration
    - d. School Plant
    - e. Staff Personnel
    - f. Community Relations

- E. Electives ..... 12-18 semester hours  
This elective credit may be the candidate's choice, subject to such requirements as the institution may have for the Master's degree, but it should be designed primarily to add to one's skill as a teacher.

V. Counselor's Graduate Certificate:

- A. Hold or be qualified to hold a Class A Teacher's Certificate
- B. Have at least 3 years' successful teaching experience
- C. Have the time equivalent of at least one year of occupational experience in one or more wage earning jobs other than teaching or counseling
- D. A Master's degree in the professional field of guidance to include:
  1. A minimum of 18 semester hours of professional courses distributed among the following areas:

Principles of Guidance\*  
Analysis of the Individual  
Counseling Techniques  
Occupational and Educational Information  
Administrative Relationship of the Guidance Program  
Supervised Practicum

2. 12 hours of work distributed among related courses in the areas of education, economics, psychology, and sociology
3. Completion of a satisfactory thesis

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\*May be taken at the undergraduate level.

## GRADUATE PROGRAM IN EDUCATION FOR TEACHERS AND PRINCIPALS

This program is designed especially for persons who are interested in some phase of educational, industrial, social or government work and is organized so that one may complete the North Carolina requirements for the graduate certificate and the Master of Science degree simultaneously.

The program is flexible and will permit sufficient concentration in a given subject matter field to qualify for certification thus making it possible to secure teaching certificates in several fields.

The following is the general program to be pursued by graduate students to qualify for a teaching certificate:

**A. For teaching certificates**

1. Required courses

Ed. 601. Theory of American Public Education .....	3 Q.H.
Ed. 622. Measurements and Evaluation .....	3 Q.H.
Ed. 612. Techniques of Research .....	3 Q.H.
Guid. 601. Field of Guidance .....	3 Q.H.
Ed. 621. Educational Psychology .....	3 Q.H.
Ed. 605. Teaching Principles .....	3 Q.H.
Ed. 606. Curriculum .....	3 Q.H.
2. Subject-Matter courses according to certificate .....	9-18 Q.H.
3. Thesis and Electives .....	9-18 Q.H.

**B. For Principals and Supervisors**

1. Required courses

Ed. 601. Theory of American Public Education .....	3 Q.H.
Ed. 622. Measurements and Evaluation .....	3 Q.H.
Ed. 612. Techniques of Research .....	3 Q.H.
Ed. 605. Teaching Principles .....	3 Q.H.
Ed. 606. Curriculum .....	3 Q.H.
Ed. 609. School Planning .....	3 Q.H.
Ed. 626. H. S. Administration .....	3 Q.H.
Ed. 627. H. S. Supervision .....	3 Q.H.
Ed. 624. Elem. Sch. Administration .....	3 Q.H.
Ed. 625. Elem. Sch. Supervision .....	3 Q.H.
Guid. 601. Field of Guidance .....	3 Q.H.
Social Science .....	3 Q.H.

2. Electives and Thesis .....

Graduate programs in certain other graduate areas will be outlined, on request, by Major Professor of the area concerned and the Dean of the Graduate School.

**GRADUATE COURSES OF INSTRUCTION**

Graduate courses are offered in the major departments of the college and are on single-term (quarter) basis.

Courses in the 500 series which may be pursued by graduate students are listed under the departments of the three major colleges of the institution.

**AGRICULTURAL ECONOMICS**

- 601. Economics of Agricultural Production.
- 602. Farm Organization and Management.
- 603. Land Economics.
- 604. Current Problems in Agricultural Economics.
- 605. Research in Agricultural Economics.

**AGRICULTURAL EDUCATION**

- 601. Administration and Supervision.
- 602. Curricular Construction in Vocational Agriculture.
- 603. History of Vocational Agriculture.
- 604. Community Problems in Agriculture.
- 605. Public Relations in Agriculture.
- 606. Research in Vocational Education.

**AGRONOMY**

- 631. The Soils of North Carolina.
- 634. Legumes and Grasses.
- 635. Crop Breeding.

**ANIMAL HUSBANDRY**

- 601. Research Studies in Animal Husbandry.
- 602. Poultry Research.
- 603. Seminar.

**BACTERIOLOGY**

- 601. Soil Bacteriology.
- 602. Dairy Bacteriology.

**CHEMISTRY**

- 601. Problems in Organic Chemistry.

**EDUCATION**

- 601. Theory of American Public Education.
- 602. Negro Education in the Bi-Racial System.
- 603. The County Training School.

- 604. The Small Negro Rural School.
- 605. Principles of Teaching.
- 606. The Curriculum.
- 607. History of American Education.
- 608. Philosophy of Education.
- 609. School Planning.
- 610. Special Workers and Services in Rural Education.
- 611. Audio-Visual Aids Program.
- 612. Techniques and Methods of Research.
- 613. Organization of Audio-Visual Programs.
- 614. Audio-Visual Aids Workshop.
- 615. Problems and Trends in Teaching Social Sciences.
- 616. Problems and Trends in Teaching Science.
- 617. Mental Hygiene for Teachers.
- 621. Educational Psychology.
- 622. Measurements and Evaluation.
- 623. Educational Sociology.
- 624. Elementary School Administration.
- 625. Elementary School Supervision.
- 626. High School Administration.
- 627. High School Supervision.
- 628. Adult Education.

#### **ENGLISH**

- 601. Expository Writing.
- 602a. Studies in English Literature.
- 602b. Studies in English Literature.
- 603a. Problems in English.
- 603b. Problems in English.
- 604a. Aspects of American Literature.
- 604b. Aspects of American Literature.
- 605. Modern World Fiction.

#### **GEOGRAPHY AND GEOLOGY**

- 601. The Physical Universe.
- 602. Geology.
- 603. Geography of North America.
- 604. Conservation of Natural Resources.

#### **GOVERNMENT**

- 601. The Federal Government.
- 602. State and Local Government.
- 603. Government Finances.
- 605. The Constitution and Minorities.
- 606. Research and Current Problems.

**GUIDANCE AND PERSONNEL WORK**

- 601. The Field of Guidance.
- 602. Psychological Aspects of Guidance.
- 603. School and Community Guidance Programs.
- 604. Student Personnel: Program and Problems.
- 605. The Function of the Teacher in Guidance.
- 606. Case Work in Guidance.
- 607. Personnel Administration.
- 609. Guidance for Rural Youth.
- 610. Guidance in the School.
- 612. Techniques of Individual Analysis.
- 613. Techniques in Counselling.
- 614. Occupational Information.
- 615. Diagnostic Techniques in Guidance.
- 616. Administration of Guidance.
- 618. Guidance Laboratory (Practicum).

**HISTORY**

- 604. The Negro in the Reconstruction of the South.

**INDUSTRIAL ARTS**

- 608, 609, 610. Comprehensive Shop Problems.
- 611, 612, 613. Problems in Industrial Arts.
- 624. Laboratory Planning for Industrial Shops.

**INDUSTRIAL EDUCATION**

- 602. Current Problems in Industrial Education.
- 603. Industrial Psychology.
- 604. Supervision and Administration of Industrial Education.
- 605. Curriculum Laboratory in Industrial Education.
- 606. Research Problems in Industrial Education.
- 620. Co-operative Training.
- 631. General Industrial Education Programs.

**MATHEMATICS**

- 601. Theory of Equations.
- 605. Statistical Methods.

**ORNAMENTAL HORTICULTURE**

- 601. Research in Crops.
- 602. Research in Soils.

**PHYSICS**

- 602. Heat.
- 605. Modern Physics.

**POULTRY SCIENCE**

- 601. Production Studies and Experiments.

**VOCATIONAL EDUCATION**

- 619. Techniques in Educational and Vocational Guidance.
- 622. Tests and Measurements in Vocational Education.
- 628. Research in Special Problems.
- 631. The Teaching of Agriculture in the High School.

**ZOOLOGY**

- 601. Special Problems in Insect Control.

## **DESCRIPTION OF COURSES**

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### **DEPARTMENT OF AGRICULTURAL ECONOMICS**

The Department of Agricultural Economics offers courses in farm management, agricultural marketing, agricultural finance, agricultural statistics, land economics, agricultural policy, agricultural prices, and rural sociology.

The Department offers curricula leading to the degree of Bachelor of Science in (1) Agricultural Marketing, (2) Farm Management, and (3) General Agricultural Economics.

Students who wish to major in this Department should follow the Basic Curriculum in Agriculture for the freshman and sophomore years (see page 58). The Head of the Department and faculty will assist the student in planning his program for the junior and senior years.

### **CURRICULUM IN AGRICULTURAL ECONOMICS**

#### **Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Economics 122, 131, 145 .....	3(2-2)	5(5-0)	3(3-0)
Agricultural Economics 132, 146 .....	3(2-2)	.....	2(2-0)
Economics 232, 233, 234 .....	5(5-0)	5(5-0)	5(5-0)
Mathematics 313, 321 .....	5(5-0)	5(5-0)	.....
English 224 .....	.....	.....	3(2-2)
Electives .....	3( )	3( )	3( )
	<hr/>	<hr/>	<hr/>
	19	18	16

#### **Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Economics 150, 501, 505 .....	2(2-0)	3(2-2)	3(3-0)
Agricultural Economics 508, 510 .....	.....	3(0-6)	2(2-0)
Rural Sociology 131 .....	3(3-0)	.....	.....
Political Science 231 .....	5(5-0)	.....	.....
English 231 .....	3(3-0)	.....	.....
Agricultural Economics 502 .....	.....	3(3-0)	.....
Education 221 .....	.....	.....	5(5-0)
Agricultural Economics 142 .....	.....	3(3-0)	.....
Electives .....	3( )	6( )	6( )
	<hr/>	<hr/>	<hr/>
	16	18	16

## CURRICULUM IN AGRICULTURAL MARKETING

## Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Economics 122, 131, 146 .....	3(2-2)	5(5-0)	2(2-0)
Dairy Husbandry 123, 142 .....	3(2-2)	3(2-2)	.....
Economics 233 .....	5(5-0)	.....	.....
Political Science 231 .....	5(5-0)	.....	.....
English 224 .....	.....	3(2-2)	.....
Rural Sociology 131 .....	.....	3(3-0)	.....
Agricultural Economics 132 .....	.....	.....	3(2-2)
Animal Husbandry 142 .....	.....	.....	4(2-4)
Poultry Husbandry 143 .....	.....	.....	3(3-0)
Horticulture 141 .....	.....	.....	4(2-4)
Electives .....	3( )	3( )	3( )
	<hr/>	<hr/>	<hr/>
	19	17	19

## Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Education 221 .....	5(5-0)	.....	.....
Agricultural Economics 142, 504, 505 .....	3(3-0)	3(3-0)	3(3-0)
Agricultural Economics 502, 508, 510 .....	3(3-0)	3(0-6)	2(2-0)
Home Administration 123 .....	3(3-0)	.....	.....
Business Administration 321 .....	.....	5(5-0)	.....
English 231 .....	.....	3(3-0)	.....
Electives .....	3( )	3( )	3( )
	<hr/>	<hr/>	<hr/>
	17	17	16

## CURRICULUM IN FARM MANAGEMENT

## Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Economics 122, 123, 131 .....	3(2-2)	3(3-0)	5(5-0)
Agricultural Economics 132, 145 .....	3(2-2)	3(3-0)	.....
Animal Husbandry 132, 135 .....	5(3-4)	3(3-0)	.....
Agricultural Engineering 131 .....	3(1-4)	.....	.....
Business Administration 321 .....	.....	5(5-0)	.....
Dairy Husbandry 123 .....	.....	.....	3(2-2)
Horticulture 141 .....	.....	.....	4(2-4)
English 224 .....	.....	.....	3(2-2)
Electives .....	3( )	3( )	3( )
	<hr/>	<hr/>	<hr/>
	17	17	18

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Economics 141, 142, 503 .....	3 (2-2)	3 (3-0)	3 (2-2)
Political Science 231 .....	5 (5-0)	.....	.....
Soils 140 .....	3 (3-0)	.....	.....
Agricultural Engineering 123 .....	3 (1-4)	.....	.....
Agricultural Economics 502 .....	.....	3 (3-0)	.....
Poultry Husbandry 142 .....	.....	3 (3-0)	.....
Field Crops 131 .....	.....	3 (2-2)	.....
Agricultural Engineering 132 .....	.....	.....	3 (1-4)
Education 221 .....	.....	.....	5 (5-0)
Rural Sociology 131 .....	.....	.....	3 (3-0)
Electives .....	3 ( )	3 ( )	3 ( )
	<hr/>	<hr/>	<hr/>
	17	16	17

**122. Introduction to Agricultural Economics**

The application of the fundamental principles of economics to agricultural production; the marketing of farm products; farm credit; land tenure and related economic problems of the farmer. Prerequisite: Economics 231. Credit 3 (2-2).

**123. Farm Management**

Fundamental principles of farm organization and management. Enterprise selection, size of business, budgeting, farm work programs, farm analysis, leases, layout and general managerial problems. Prerequisite: Ag. Econ. 122. Credit 3 (3-0).

**131. Marketing Agricultural Products**

Fundamental principles and practices of marketing as applied to farm products; marketing cost; an appraisal of marketing methods. Prerequisite: Ag. Econ. 122. Credit 5 (5-0).

**132. Agricultural Statistics**

Elementary statistical methods as applied to all areas of agriculture, and an introduction to the use of calculating machines. Credit 3 (2-2).

**141. Farm Records**

Methods and practices employed in taking farm inventories, keeping records and accounts on the farm; receipts and expenses, preparing financial statements, analysis and interpretation of results obtained from farm transactions. Credit 3 (2-2).

**142. Agricultural Finance**

Farm credit needs; the classification of farm credits; an analysis of the Farm Credit Administration and other credit agencies and institutions. Credit 3 (3-0).

**145. Land Economics**

Land as a factor of production; classification and use of rural land; tenure policies; public interest in a land policy, including settlement, credit, etc. Credit 3(3-0).

**146. Land Income**

Economics of land use, theories of rent, principles of land evaluation and taxation. 2(2-0).

**147. Agricultural Cooperation**

Principles and problems of organization, management, and supervision of cooperative endeavors of farmers in buying and selling, and service associations. Credit 3(3-0).

**148. Agricultural Legislation**

An analysis of legislation and regulations of federal, state and local levels affecting the farm business. The effects of such legislation upon agriculture. Credit 3(3-0).

**149. Southern Resources**

Population, agriculture, transportation, industry, wealth, social areas, etc. of the South, and particularly North Carolina. It also includes the formulation of solutions for economic and social problems. Credit 3(3-0).

**150. Farmer Movements**

A study of the history, development and programs of the major farm organizations in the United States; present and past. Credit 2(2-0).

**Advanced Undergraduates and Graduates****501. Advanced Agricultural Statistics**

Advanced statistical methods as applied to agriculture; special consideration will be given to index numbers, tabulation of numerical data, graphic presentation, analysis and interpretation of statistical data, and the formulation of agricultural problems for study. Prerequisite: Ag. Econ. 132. Credit 3(2-2).

**502. Agricultural Policies**

The formulation and impact of public policy on agriculture; the importance of agriculture in the national and international economy; past, present and proposed agricultural programs and policies. Credit 3(3-0).

**503. Farm Cost Accounts**

A study of records needed to determine the profits of various agricultural enterprises; how to set up and keep these accounts; interpretation of results, and their specific use in farm management. Credit 3(2-2).

**504. Land Appraisal**

Factors determining land value; methods of evaluation; appraisal of farm land for specific use; for purposes of taxation, for making loans and for sale. Credit 3(3-0).

**505. Agricultural Prices**

Cyclical movement and seasonal variation of prices; the general price level; construction of index numbers; and control of agricultural prices. Credit 3(3-0).

**506. Business Law**

Fundamental principles of law as applied to business transactions of farmers; property rights; sales; negotiable documents of title; credit instruments. Credit 3(3-0).

**507. Economics of Agriculture**

A course designed to provide students with the tools of analysis for comprehending the problems of farm production. The evaluation of concepts of production. Credit 3(3-0).

**508. Special Problems (Marketing, Farm Management and General Agricultural Economics)**

This course is designed for students who desire to work out special problems in the field of agricultural economics. Consent of the chairman of the department must be obtained. Credit 3-6(0-6).

**509. Advanced Farm Management**

Plan, organization and management of different types of farms. Trips to nearby farms with study of organization and plans for re-organization. Credit 3(2-2).

**510. Seminar in Agricultural Economics**

Discussions and reports. Prerequisite: Consent of the instructor. Credit 2(2-0).

**RURAL SOCIOLOGY****131. Principles of Rural Sociology**

Social systems, cultural patterns and institutional arrangements of people in rural environments in relation to those of towns and cities. Credit 3(3-0).

**Advanced Undergraduates and Graduates****501. Rural Social Problems**

Population, education, religion, health, land tenure, parity income, farm labor and mechanization, and housing. Credit 3(3-0).

**502. Rural Leadership**

Opportunities and needs for rural leadership; educational and psychological requirements for various types of rural leaders. Credit 3(3-0).

**503. The Rural Family**

The institutional nature of the rural family, etc., role in the community including its relations to educational, religious, welfare and other community organizations. Credit 3(3-0).

**504. Community Organization**

Planning and organizing educational, health, recreational and religious activities for rural people. Credit 3(3-0).

**505. Rural Standards of Living**

Consumption behavior in the main community groups of our society. Credit 3(3-0).

**506. Special Problem in Rural Sociology**

Students will work on a problem in rural sociology under the guidance of a member of the faculty. Credit 2 to 4 hours.

**DEPARTMENT OF AGRICULTURAL EDUCATION**

The Department of Agricultural Education offers professional courses in agricultural education and cooperative agricultural and home economics extension work.

The Department offers curricula leading to the degree of Bachelor of Science in Agricultural Education.

Students who plan to major in Agricultural Education should follow the Basic Curriculum in Agriculture for the freshman and sophomore years. The Head of the Department and faculty will assist the student in planning a program for the junior and senior years.

**CURRICULUM IN AGRICULTURAL EDUCATION****Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Education 223, 231, 233 .....	3 (2-2)	3 (3-0)	3 (2-2)
Agricultural Economics 122, 123 .....	3 (3-0)	3 (3-0)	.....
Agricultural Engineering 123, 124 .....	.....	3 (1-4)	3 (1-4)
Animal Husbandry 132 .....	3 (3-0)	.....	.....
Dairy Husbandry 123 .....	3 (2-2)	.....	.....
English 224 .....	3 (2-2)	.....	.....
Horticulture 133, 135 .....	.....	3 (2-2)	3 (1-4)
Soils 132 .....	.....	3 (3-0)	.....
Botany 133 .....	.....	.....	3 (2-2)
Zoology 133 .....	.....	.....	3 (2-2)
Electives .....	3 ( )	3 ( )	3 ( )

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Education 237 or 238 .....	3(3-0)	.....	.....
Rural Sociology 131 .....	3(3-0)	.....	.....
Agricultural Education 141, 142 .....	5(5-0)	5(5-0)	.....
Agricultural Education 501a, 143 .....	3(3-0)	5(5-0)	.....
Agricultural Education 501b .....	.....	3(3-0)	.....
Animal Husbandry 144 .....	.....	.....	3(1-4)
Political Science 231 .....	.....	.....	5(5-0)
Animal Husbandry 135 .....	.....	.....	3(3-0)
Agricultural Engineering 501 .....	.....	.....	3(3-0)
Electives .....	3( )	3( )	3( )
	<hr/>	<hr/>	<hr/>
	17	16	17

**AGRICULTURAL EDUCATION****141. Materials and Methods of Teaching Vocational Agriculture**

Principles of teaching as applied to vocational agriculture; making lesson plans, and other teaching devices to meet community needs. Prerequisite: Education 231 and 247. Credit 5(5-0).

**142. Observation and Directed Practice Teaching**

Students will be required to spend eight weeks in an approved training center in observation and directed practice teaching. Credit 5 hours.

**143. Problems in Teaching Vocational Agriculture**

Discovery and analysis of problems in the field, program building and evaluation of instruction. Prerequisite: Agr. Ed. 142. Credit 5(5-0).

**Advanced Undergraduates and Graduates****500. The Use of Audio-Visual Aids in Teaching Vocational Agriculture**

The use of charts, slides, film-strips, motion pictures, demonstrations, field trips, radios and other teaching aids for specific teaching situations. Special emphasis is placed on making preparation for and developing techniques in using and evaluating audio-visual aids. Credit 3(2-2).

**501. Evening School and Part-Time Work**

Principles and problems of setting up and directing adult groups and out-of-school groups with emphasis on collecting and arranging materials for evening-class instruction. Credit 3(3-0).

**501a. Teaching Out-of-School Groups**

Methods and materials used in teaching young farmers and adult groups. Course includes developing various teaching devices and aids for instructing out-of-school groups. Prerequisite: Education 223, 231, 233, and 237. Credit 3(3-0).

**501b. Teaching Out-of-School Groups**

Organizing, planning and teaching young farmers and adult classes; including working with community committees and organizations and evaluating the outcomes with such groups. Prerequisite: Education 501a. Credit 3(3-0).

**502. Problem Teaching in Vocational Agriculture**

Setting up problems for teaching unit courses in vocational agriculture. Credit 3(3-0).

**503. The New Farmers of America**

The practices and procedures of setting up local, district and state organizations. Emphasis will be given to training officers and members. Credit 3(3-0).

**504. The Principles of Agricultural Education**

Consideration of the principles and practices in agricultural education in keeping with research and new trends. Credit 3(3-0).

**505. Guidance and Group Instructions**

Group instructions applied to agricultural occupations, guidance and counseling with special reference to pupils in vocational agriculture. Credit 3(3-0).

**Graduates Only****601. Administration and Supervision**

Administrative and supervisory problems of vocational agriculture, the practices and policies of local, state and federal agencies dealing with administration and supervision of vocational agriculture. Credit 3(3-0).

**602. Curriculum Construction in Vocational Agriculture**

Building unit courses in vocational agriculture and selecting subject matter to use with the course along with the common problems of evaluating the content of the course. Credit 3(3-0).

**604. Community Problems in Agriculture**

Finding the common problems of the community that relate to agriculture and developing solutions. Credit 3(3-0).

**605. Public Relations in Agriculture**

This course deals with the means and methods of promoting and publicizing local programs in agriculture. The use of the press, radio and other devices is emphasized. Credit 3(3-0).

**606. Research in Vocational Education**

Research problems developed under the supervision of some member of the staff. Credit 3(3-0).

**607. Philosophy of Vocational Education**

This course deals with the underlying philosophy and basic principles of vocational education. Emphasis is placed upon the factors contributing to the nature, purpose, scope, organization, and administration of vocational education in agriculture. Special consideration is given to all areas of vocational training, the types of schools and trends. The student will be required to develop and defend his philosophy of vocational education. Credit 3(3-0).

**608. Seminar in Agricultural Education**

This course is designed for graduate students having a major in Agricultural Education. Only candidates for the advanced degrees are eligible to take the course which includes a review of current articles and books of interest to students in Agricultural Education. Credit 1(1-0).

**AGRICULTURAL AND HOME ECONOMICS EXTENSION****141. Principles of Extension Education**

Background, development, and organization of the Agricultural and Home Economics Extension Service; principles underlying extension education; program building and techniques of teaching. Credit 3(3-0).

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**DEPARTMENT OF ANIMAL INDUSTRY**

Courses in animal industry cover the study of beef cattle, dairy cattle, swine, poultry and their products; the management of herds, flocks and studs; feeding, breeding, general sanitation, hygiene and disease of livestock and poultry; and the chemical and physiological phases of animal nutrition.

The Department offers curricula leading to the degree of Bachelor of Science in (1) Animal Husbandry, (2) Dairy Husbandry, and (3) Poultry Husbandry.

The curricula are designed to equip men as owners and managers of general farms where livestock is handled, for the more specialized types of dairy and poultry farming, as instructors and investigators in animal industry and animal nutrition.

Students who wish to major in the Department should follow the Basic Curriculum in Agriculture for the freshman and sophomore years (see page 58). Programs for the junior and senior years should be planned in conference with the Head of the Department.

**CURRICULUM IN ANIMAL HUSBANDRY****Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Economics 122, 123, 131 .....	3(2-2)	3(3-0)	5(5-0)
Animal Husbandry 124, 131, 132 .....	3(2-2)	4(2-4)	5(3-4)
Zoology 142, 143 .....	3(3-0)	4(2-4)	.....
Chemistry 121, 131 .....	5(2-6)	5(3-4)	.....
Bacteriology 123 .....	.....	.....	5(3-4)
Electives .....	3( )	3( )	3( )
	<hr/>	<hr/>	<hr/>
	17	19	18

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Animal Husbandry 133, 144 .....	3(2-2)	.....	3(1-4)
Animal Husbandry 501, 142 .....	5(5-0)	.....	4(2-4)
English 224 .....	3(2-2)	.....	.....
Rural Sociology 131 .....	3(3-0)	.....	.....
Field Crops 131 .....	.....	3(2-2)	.....
Soils 132 .....	.....	3(3-0)	.....
Bacteriology 144 .....	.....	4(2-4)	.....
Dairy Husbandry 134 .....	.....	3(2-2)	.....
Agricultural Economics 141 .....	.....	.....	3(2-2)
Animal Husbandry 135 .....	.....	.....	3(3-0)
Electives .....	3( )	3( )	3( )
	<hr/>	<hr/>	<hr/>
	17	16	16

**ANIMAL HUSBANDRY****111. Breeds of Livestock**

Breeds of farm animals with reference to their origin and development. Credit 3(2-2).

**122. Types and Market Classes of Livestock**

The economic importance, classification and grading of cattle, sheep, swine, horses, and livestock products. Credit 3(2-2).

**124. Swine Production**

The place of swine in the farm program; their selection, breeding, care and management. Credit 3(2-2).

**131. Anatomy and Physiology of Domestic Animals**

Designed to acquaint students with gross structure and function of tissues, organs and systems of the animal. Credit 4(2-4).

**132. Livestock Feeding**

Principle of feeding and the composition of feeds. Practice in formulating rations for the various classes of livestock. Credit 5(3-4).

**133. Diseases of Farm Animals**

The common diseases of livestock with reference to causes, prevention and treatment. Credit 3(2-2).

**135. Beef Production**

Breeds of beef cattle, their selection, care and management. Credit 3(3-0).

**142. Farm Meats**

Meat production from a market standpoint with laboratory work in the slaughtering, curing, and marketing of meat products. Credit 4(2-4).

**144. Livestock Judging**

Special training in points of selection of farm animals. Credit 3(1-4).

**Advanced Undergraduates and Graduates****501. Animal Nutrition**

Metabolism of carbohydrates, fats, proteins and minerals. Net energy values and application to new theories of feeding. Credit 5(5-0).

**DAIRY HUSBANDRY****123. Principles of Dairying**

A study of dairy products. Credit 3(2-2).

**134. Dairy Cattle and Milk Production**

Breeds of dairy cattle, their development, care and management. Credit 3(2-2).

**141. Dairy Management**

Designs and construction of dairy buildings, problems of economical milk production, fitting and showing dairy cattle. Credit 3(1-4).

**142. Market Milk**

The market milk industry, milk ordinances, city milk supply, transportation, grading, pasteurizing, and bottling. Credit 3(2-2).

**144. Ice Cream Making**

The principles involved in the manufacturing of commercial ice cream and ices. Prerequisite: D. H. 123. Credit 3(1-4).

**146. Dairy Plant Practice**

Assigned practice work in the butter, milk and ice cream laboratories of the college creamery. Prerequisite: D. H. 144. Credit 2 to 6 hours.

**CURRICULUM IN POULTRY HUSBANDRY****Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Poultry Husbandry 131, 132, 122 .....	3 (2-2)	4 (2-4)	3 (2-2)
Chemistry 131, 132 .....	5 (3-4)	5 (3-6)	.....
Zoology 142, 133 .....	3 (3-0)	.....	3 (2-2)
Bacteriology 123 .....	5 (3-4)	.....	.....
Political Science 231 .....	.....	.....	5 (5-0)
English 224 .....	.....	.....	3 (2-2)
Electives .....	3 ( )	8 ( )	3 ( )
	<hr/>	<hr/>	<hr/>
	19	17	17

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Poultry Husbandry 141, 142, 143 .....	4 (2-4)	3 (3-0)	3 (3-0)
Agricultural Economics 131 .....	5 (5-0)	.....	.....
Agronomy 124 .....	3 (2-2)	.....	.....
English 244 .....	3 (3-0)	.....	.....
Rural Sociology 131 .....	.....	3 (3-0)	.....
Poultry Husbandry 502 .....	.....	2-3 ( )	.....
Agricultural Economics 141 .....	.....	.....	3 (2-2)
Agricultural Engineering 124 .....	.....	.....	3 (0-6)
Electives .....	3 ( )	8 ( )	8 ( )
	<hr/>	<hr/>	<hr/>
	18	16-17	17

**POULTRY HUSBANDRY****111. Principles of Poultry Husbandry**

The industry, origin of breeds, classification, elements of production practices, selection and improvement. Credit 3(3-0).

**112. Poultry Production**

Feeding, housing, sanitation, parasites and disease control, and the economics of production. Credit 3(2-2).

**122. Incubation and Brooding**

Incubation and operation of various types of incubators and brooders. The chick, its care and management through the first four weeks; economics of hatchery operation. Credit 3(2-2).

**123. Turkey Production Management**

History, origin, development and management of the turkey flock. Credit 3(2-2).

**131. Judging and Selection of Poultry**

Standard and utility judging of fowls, selection and preparation of breeds for show purposes. Credit 3(2-2).

**132. Poultry Feeds and Feeding**

Poultry feeds, compounding rations, feeding standards for breeding, fattening, growing and production stock, feeding appliances and practices. Credit 4(2-4).

**141. Disease and Parasites**

Poultry hygiene and sanitation, nature and causes of diseases, relation of management to control of disease and parasites. Credit 4(2-4).

**142. Poultry Farm Management**

Principles of farm management as applied to poultry, selection of farm layouts, study of records, and factors influencing returns. Credit 3(3-0).

**143. Marketing Poultry Products**

Methods of killing, grading, storage and marketing poultry and poultry products. Credit 3(3-0).

**Advanced Undergraduates and Graduates****502. Special Problems in Poultry Husbandry**

Problems in disease, nutrition, and breeding. Credit 2-3 hours.

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**DEPARTMENT OF ARCHITECTURAL ENGINEERING**

The objective of the course in architectural engineering is to provide a sound training in subjects basic to the engineering design and construction of buildings.

In order that the students may acquire self-reliance, they are increasingly thrown upon their own resources as they advance from year to year.

In recognition of the many directions toward which an architectural education may guide students in this field, the Department of Architectural Engineering announces that electives in related work may be chosen by students of good standing with the approval of the Head of the Department in substituting of suggested electives.

The course of architectural engineering covers four years and leads to the degree of Bachelor of Science in Architectural Engineering.

**Freshman Year**

(See First Year's Curricula of Engineering, page 67)

**Sophomore Year**

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Freehand Drawing 311, 313 .....	3 (0-6)	.....	3 (0-6)
Arch. Perspective and Shades and Shadows, A.E. 324 .....	.....	3 (0-6)	.....
General Physics 321, 322, 323 .....	5 (3-4)	5 (3-4)	5 (3-4)
Mathematics 321, 322, 323 .....	5 (5-0)	5 (5-0)	5 (5-0)
Arch. Design, A.E. 321, 322, 323 .....	4 (0-8)	4 (0-8)	4 (0-8)
Military or Air Science 221, 222, 223 ....	2 (2-2)	2 (2-2)	2 (2-2)
	<hr/>	<hr/>	<hr/>
	19 hrs.	19 hrs.	19 hrs.

**Junior Year**

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mechanics, M.E. 331, 332, 333 .....	5 (5-0)	5 (5-0)	5 (5-0)
Arch. Design, A.E. 331, 332, 333 .....	5 (0-10)	5 (0-10)	5 (0-10)
History of Arch., A.E. 325, 326, 327 .....	4 (4-0)	4 (4-0)	4 (4-0)
Working Drawings, A.E. 334, 335, 336 ....	3 (0-6)	3 (0-6)	3 (0-6)
Electives .....	3 hrs.	3 hrs.	3 hrs.
	<hr/>	<hr/>	<hr/>
	20 hrs.	20 hrs.	20 hrs.

**Senior Year**

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Theory of Structures A.E. 341, 342, 343 ..	5 (0-10)	5 (0-10)	5 (0-10)
Reinforced Concrete Design, A.E. 345 ....	.....	4 (4-0)	.....
Arch. Practice, A.E. 346 .....	2 (4-0)	.....	.....
Surveying Math. 324 .....	.....	.....	3 (1-4)
Contracts and Specifications, M.E. 327 ....	.....	.....	3 (3-0)
Materials of Construction, I.A. 324 .....	.....	3 (3-0)	.....
Heating and Ventilating, M.E. 334, 335 ...	3 (3-0)	3 (3-0)	.....
Testing Materials, M.E. 346 .....	2 (0-4)	.....	.....
Economics 231, 234 .....	5 (5-0)	.....	5 (5-0)
Electives .....	4 hrs.	4 hrs.	3 hrs.
	<hr/>	<hr/>	<hr/>
	21 hrs.	19 hrs.	19 hrs.

**Note:** The junior and senior electives may be taken in Advanced Military or Air Science or they may be made up on the basis of 6 credits of non-technical course work. Planning of the entire elective credits will be in consultation with the student's adviser.

**Suggested Electives**

Architectural Engineering 347, 348  
Electrical Engineering 321  
Mathematics 331

French 211  
English 244  
Commercial Law 335

**COURSES IN ARCHITECTURAL ENGINEERING****321. Architectural Design**

The requirements and the solutions of problems for small residential buildings, emphasizing economy with the design of one and two bedroom units. Prerequisite: M.E. 312. Credit 4(0-8).

**322. Architectural Design**

Problems in the design of a series of small buildings emphasizing environmental influences, space organization, climate, orientation and materials and methods of construction. Prerequisite: A.E. 321. Credit 4(0-8).

**323. Architectural Design**

Advanced residential design requiring the solution of planning for special, more elaborate requirements and for multiple uses. Prerequisite: A.E. 322. Credit 4(0-8).

**324. Architectural Perspective and Shades and Shadows**

Drafting principles of architectural perspective and methods of developing shades and shadows on architectural subjects. Prerequisite: M.E. 314. Credit 3(0-6).

**325. History of Architecture (Formerly Art 324)**

A study of Ancient and Classical Architecture including the Egyptian, Western Asiatic, Greek, Roman and Early Christian styles. Credit 4(4-0).

**326. History of Architecture (Formerly Art 325)**

A study of the Byzantine, Romanesque and Gothic Architectural styles. Prerequisite: A.E. 325. Credit 4(4-0).

**327. History of Architecture (Formerly Art 326)**

The Renaissance, Early American and Modern architectural styles. Prerequisite: A.E. 326. Credit 4(4-0).

**331. Architectural Design**

Continuation of design principles initiated in the sophomore year. Solutions to building problems from the requirements of many fields of activity, (education, recreation, religion, industry, etc.). The development of one small scale model of a completed design is included. Prerequisite: A.E. 323. Credit 5(0-10).

**332. Architectural Design**

Continuation of A.E. 331 and includes emphasis on interior design. Prerequisite: A.E. 331. Credit 5(0-10).

**333. Architectural Design**

The design of certain parts of larger buildings and studying the problems involved. At least one complete design is required for a larger building. Prerequisite: A.E. 332. Credit 5(0-10).

**334. Architectural Working Drawings**

Drafting room principles are emphasized. The complete working drawings for residences including plans, elevations, and a series of architectural details. Prerequisite: A.E. 323. Credit 3(0-6).

**335. Architectural Working Drawings**

The economical use of timber for building construction. The design and detailing of timber trusses, girders and laminated members. Complete working drawings for a heavy timber building including foundation and footing design. Prerequisite: A.E. 334. Credit 3(0-6).

**336. Architectural Working Drawings**

Continuation of A.E. 335: Concrete, masonry and steel construction details for fireproof and semi-fireproof buildings, including the development of structural sections, architectural plans, and elevations for larger buildings. Prerequisite: A.E. 335. Credit 3(0-6).

**341. Theory of Structures (Formerly Lab. Work w/Indiv. Criticism)**

The theory of stress analysis as it applies to building structures. Includes loadings, reactions, shears, moments, deflections, beam theory and design. Mathematical and graphical solutions are covered. Prerequisite: M.E. 333. Credit 5(0-10.)

**342. Theory of Structures (Formerly Lab. Work w/Indiv. Criticism)**

Continuation of A.E. 341: Column theory and design, steel truss and plate girder design. Special beam and girder connections, truss deflections by methods of virtual work and Williot Mohr. Prerequisite: A.E. 341. Credit 5(0-10.).

**343. Theory of Structures (Formerly Lab. Work w/Indiv. Criticism)**

Continuation of A.E. 342: The analysis of statically indeterminate portal frames and bents. Virtual work, angle change, slope deflection, and moment distribution methods are applied to the solution of indeterminate problems. Prerequisite: A.E. 342. Credit 5(0-10.).

**345. Reinforced Concrete Design**

The theory and design of reinforced concrete members as applied to building structures. Includes the design of footings, beams, columns and slabs. Prerequisite: A.E. 341. Credit 4(4-0).

**346. Architectural Practice**

Procedures of the professional practice of architecture. Siminar. Prerequisite: Senior classification. Credit 2(4-0).

**347. Architectural Design**

Elective for students with special interest in architectural design. Laboratory work with individual criticism. Prerequisite: A.E. 333. Credit 5(0-10).

**348. Architectural Design**

Continuation of A.E. 347. Laboratory work with individual criticism. Prerequisite: A.E. 347. Credit 5(0-10).

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**DEPARTMENT OF ART****GENERAL STATEMENT**

The objectives of this course are as follows:

- (a) To discover and develop the latent talent of students for artistic expression and lay a foundation for careers as creative artists.
- (b) To meet a growing demand for specially trained art teachers in public schools and colleges.
- (c) To develop tastes and discriminations in choice of materials used in everyday life which will find expression in more beautiful homes and gardens, schools, parks, playgrounds and other public works.
- (d) To provide a culture leading to a more worthy use of leisure time.

All students wishing to major in art must pass a special examination or submit some of their art work for appraisal. Students in other departments desiring special work in art may by arrangement with the instructor take any course listed under art.

**CURRICULUM OF ART****Freshman Year**

(See First Year's Curricula of Engineering, page 67)

**NOTE:** Students majoring in Art will take History 213 during freshman year.

**Sophomore Year**

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English Elective .....	.....	.....	5 (5-0)
French 214, 215 .....	5 (5-0)	5 (5-0)	.....
Modern European History 211 or 212 .....	5 (5-0)	.....	.....
Freehand Drawing 311, 312, 313 .....	3 (0-6)	3 (0-6)	3 (0-6)
Art 314, 315, 316 .....	2 (2-0)	2 (2-0)	2 (2-0)
Military or Air Science 221, 222, 223 .....	2 (2-2)	2 (2-2)	2 (2-2)
Art 317, 318, 319 Color and Design .....	3 (0-6)	3 (0-6)	3 (0-6)
Elective .....	.....	3 hrs.	3 hrs.
	20 hrs.	18 hrs.	18 hrs.

**Junior Year**

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
American History 221 or 222 .....	5 (5-0)	.....	.....
Mediaeval History 232 .....	.....	5 (5-0)	.....
Commercial Art 321, 322, 323 .....	3 (0-6)	3 (0-6)	3 (0-6)
Portrait, Art 334, 335, 336 .....	2 (0-4)	2 (0-4)	2 (0-4)
Art 327, 328, 329 .....	2 (2-0)	2 (2-0)	2 (2-0)
Ceramics 337, 338, 339 .....	3 (0-6)	3 (0-6)	3 (0-6)
Composition, Art 331, 332, 333 .....	2 (0-4)	2 (0-4)	2 (0-4)
Elective .....	3 hrs.	3 hrs.	5 hrs.
	20 hrs.	20 hrs.	17 hrs.

**Senior Year**

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
History 231 .....	5 (5-0)	.....	.....
Figure Drawing, Art 341, 342 .....	3 (0-6)	3 (0-6)	.....
Oil Painting, Art 347, 348, 349 .....	3 (0-6)	3 (0-6)	3 (0-6)
Phy. Ed. 234 .....	.....	.....	5 (5-0)
Electives .....	6 hrs.	8 hrs.	6 hrs.
	17 hrs	14 hrs.	14 hrs.

**Suggested Electives**

History of Architecture 324, 325, 326.

Education 222, 231, 248, 251, 223, 237, or 238, 233, 224.

**NOTE:** The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with the students adviser.

**311. Freehand Drawing**

This course is a study of the fundamental principles of drawing. As a useful mode of visual expression selected problems involving basic considerations of line, mass and color are presented for analysis and laboratory practice. Credit 3(0-6).

**312. Lettering and Poster Design**

This course is a comprehensive study of the art of lettering with speedball pens, the principles of the layout, poster construction and general advertising. Credit 3(0-6).

**313. Water-color Painting**

This course aims to give a working knowledge of color both from the standpoint of its use and enjoyment—various theories of color are analyzed along with drills on the techniques of water-color painting. Credit 3(0-6). Prerequisite: 311.

**314. Art Appreciation**

This is an introductory course to the study of fine arts. Basic qualities of various forms of artistic expression are explained. Emphasis is placed on the application of art principles in everyday life. Credit 2(2-0).

**315. History of Art**

This course is a study of the art historic periods. Representative examples of the architecture and sculpture of ancient Egypt, Greece and Rome are selected for analysis, interpretations and comparisons. Credit 2(2-0).

**316. History of Art**

This course traces the development of the art of painting from the Italian Primitives through the English School by means of analysis and comparisons of works of representative painters. Credit 2(2-0).

**317. Color and Design**

This course deals with the theory of color and principals of pure design as applied in Textiles. The development of decorative motifs, all-over patterns, sources of design. Fall. Credit 3(1-5).

**318. Intermediate Design**

This course is a continuation of 317 with greater emphasis on the development of the student's creative ability. Introduction of block printing and stenciling. Credit 3(1-5). Prerequisite: Art 317.

**319. Advanced Design**

This course is a continuation of 318 with emphasis on applying basic principles to the production of industrial products work with looms, hand weaving, leather work and textile dyeing. Credit 3(0-6). Prerequisite: Art 318.

**320. Figure Drawing**

This course is a study of the human figure with emphasis on Anatomy, body structure and human proportions, draped and undraped figures at rest and in action. Spring. Credit 3(1-5).

**321. Commercial Art**

This is an advanced course in Freehand Drawing—with considerable emphasis on the techniques of mediums used in commercial art—laboratory drills in sketching and rendering in pen and ink and wash. Prerequisite: 313. Credit 3(0-6).

**322. Commercial Art**

This is a continuation of 321. In this course water color and show-card color are used with continued drills in laboratory techniques suitable for reproduction—cartooning. Prerequisite: 321. Credit 3(0-6).

**323. Commercial Art**

This course aims at guiding the student towards such specific branches of commercial art as book jacket designs—layouts for newspapers, designs for calendars, greeting cards, magazine illustrations, posters, etc. Prerequisite: 322. Credit 3(0-6).

**327. Art Appreciation**

This course is a study of the arts in America. Beginning with a study of the crafts and continuing through American Architecture, representative personalities and their works are studied, analyzed and interpreted. Credit 2(2-0).

**328. History of Art**

This course traces the development of the art of sculpture in America from the Revolutionary period to the present area. Credit 2(2-0).

**329. History of Art**

This course traces the development of the art of painting in America from the Revolutionary period to the present era. Emphasis is placed on analysis and interpretation of representative works. Credit 2(2-0).

**331. Composition**

This course is a study of the basic principles of pictorial composition or designing the picture with definite consideration of the requirements of commercial art, drills in abstract arrangements of dark and light. Credit 2(0-4).

**332. Composition**

This course is a continuation of 331 with emphasis on the study of accessories, figure arrangement and expression. Prerequisite: 331. Credit 2(0-4).

**333. Composition**

This course is a continuation of 332 with the introduction of a wide range of assigned topics or themes to be illustrated with original pictures. Emphasis is placed on originality, design, and expression. Credit 2(0-4).

**334. Portrait**

This course consists of drawing from the antique or cast drawing as a foundation for drawing from life. Basic considerations in modeling in full scale of values are studied and practiced: medium, charcoal. Credit 2(0-4).

**335. Portrait**

This course is a study of the techniques in the reproduction of photographs in charcoal and pastel. Emphasis on laboratory techniques. Prerequisite: 334. Credit 2(0-4).

**336. Portrait**

This course is a study of the technique of portraiture. Studies are made from living models with emphasis on composition and expression. Prerequisite: 335. Credit 2(0-4).

**337. Elementary Ceramics**

Art principles applied in the field of Ceramics. Study of the historical development, materials and processes, structural forms, simple exercises in modeling in clay. Supplementary reading and laboratory practice. Fall. Credit 3(1-5).

**338. Ceramics**

This is an intermediate course. Emphasis is placed on laboratory techniques, casting, approved practices and procedures. Winter. Credit 3(1-5). Prerequisite: Art 337.

**339. Advanced Ceramics**

Much attention is devoted to modern methods of production, building of Armatures and casting in plaster. Making of moulds, one piece, waste moulds and piece moulds, decorative processes in relation to glazing and firing. Creative thought is stimulated by composition of original designs and collecting and analysis of contemporary works. Prerequisite: 338. Credit 3(1-5).

**341. Figure Drawing**

This course is a study of the human figure from life. A study of the full length figure with emphasis on proportion, action and modeling in full values. Credit 3(0-6).

**342. Figure Drawing**

This course is a continuation of 341 with emphasis on laboratory techniques in drawing and painting from life. Credit 3(0-6).

**347. Oil Painting**

This course is an advanced study of oil painting. Emphasis is placed on the technique of oil painting, still life, landscapes and portrait. Credit 3 (0-6).

**348. Oil Painting**

This course is a continuation of 347 with emphasis on the development of original themes. Prerequisite: 347. Credit 3 (0-6).

**349. Oil Painting**

This course is a continuation of 348 with emphasis on originality of subjects and treatment. Prerequisite 348. Credit 3 (0-6).

**501. Public School Art**

Study of materials, methods and procedures in teaching art in the Public Schools. Special emphasis on selection and organization of material—seasonal projects—the lesson plan and correlation—lectures demonstrations—assigned readings. Credit 3 (3-0). Summer Quarter.

**502. Junior and Senior High School Methods**

Study of materials, methods and procedures in teaching art in Junior and Senior High Schools. Credit 3 (3-0). Summer Quarter.

**503. Seminar In Art History**

Round table discussion with student reports. Prerequisite: consent of the instructor. Credit 3 (3-0).

**504. Advanced Studio Techniques**

Problems in laboratory, practices of interest to class are selected and studied.

- (a) Water color
  - (b) Pastel
  - (c) Oil Painting
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**DEPARTMENT OF BIOLOGY**

The courses in the Biology Department are designed to serve the needs of the college as a whole in the area of biological sciences. In view of this concept, the courses are organized to provide the training necessary for specialization in agricultural science, home economics, conservation, horticulture and teaching of biology. The Department also offers courses required for entrance into graduate, medical, dental and veterinary schools.

A minimum of 45 quarter hours is required of students who plan to do their major work in biological sciences. These hours must be

selected from the following courses: Zoology 111, 112; Botany 111, 121; Zoology 123, 124, 132, 142, 143, 144, and electives from courses permitting major credit.

Required supporting courses for the majors are: General Chemistry 111, 112, 113; Organic Chemistry 131, 132; Physics 311, 312, and Mathematics 311, 312.

A minimum of 30 quarter hours is required of persons who minor in biological sciences. Persons who plan to do their minor in biology must meet the departmental requirements from the following courses: Zoology 111, 112; Botany 111, 121; Zoology 123, 143, 144.

Students planning a vocation in teaching, but whose major emphasis is in biology, should consult the Head of the Department before registering.

### MAJOR IN BIOLOGICAL SCIENCE

#### Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Zoology 111, 112 .....	5 (3-4)	5 (3-4)	.....
Botany 111 .....	.....	.....	5 (3-4)
English 211, 212, 213 .....	5 (5-0)	5 (5-0)	5 (5-0)
Math. 311, 312 .....	5 (5-0)	5 (5-0)	.....
History 211 or 212 .....	.....	.....	5 (5-0)
Education 211 .....	1 (1-0)	.....	.....
Mil. Sc. 211, 212, 213 .....	2 (2-2)	2 (2-2)	2 (2-2)
Phy. Ed. 210a, 210b, 210c .....	1 (0-2)	1 (0-2)	1 (0-2)
	_____	_____	_____
	19	18	18

#### Sophomore Year

Bot. 121 .....	3 (2-2)	.....	.....
Zool. 123 .....	.....	5 (3-4)	.....
Intro. Ed. 222 .....	.....	.....	3 (3-0)
Physics 311, 312 .....	5 (4-2)	5 (4-2)	.....
History 221 or 222 .....	.....	.....	5 (5-0)
Chem. 111, 112, 113 .....	5 (3-4)	5 (3-4)	5 (3-4)
Mil. Sc. 221, 222, 223 .....	2 (2-2)	2 (2-2)	2 (2-2)
Art 314, 315, 316 .....	2 (2-0)	2 (2-0)	2 (2-0)
Phy. Ed. 220a .....	1 (0-2)	.....	.....
	_____	_____	_____
	18	19	17

**Junior Year**

Zool. 132 .....	5 (3-4)	.....	.....
Zool. 142 .....	.....	3 (3-0)	.....
Zool. 124 .....	.....	.....	4 (2-4)
French 211, 212, 213 .....	5 (5-0)	5 (5-0)	5 (5-0)
Chem. 131, 132 .....	5 (3-4)	5 (3-4)	.....
Eng. 220 or 223 .....	.....	.....	5 (5-0)
Phy. Ed. 220b, 220c .....	.....	1 (0-2)	1 (0-2)
Minor or Electives .....	3 ( )	5 ( )	3 ( )
	<hr/>	<hr/>	<hr/>
	18	19	18

**Senior Year**

Zool. 143, 144 .....	.....	4 (2-4)	4 (2-4)
*Elective in Major Field .....	3 (3-0)	.....	.....
Gen. Psy. 221 .....	.....	5 (5-0)	.....
Principles of Soc. 231 .....	5 (5-0)	.....	.....
History 213 .....	5 (5-0)	.....	.....
Research 246 .....	.....	3 (3-0)	.....
Minor or Electives .....	5 ( )	3 ( )	10 ( )
	<hr/>	<hr/>	<hr/>
	18	15	14

**BACTERIOLOGY****123. General Bacteriology**

A general course designed to study the morphology, physiology, and taxonomy of bacteria as well as the activity they play in some of the processes encountered in everyday life. A prerequisite to all other courses offered in bacteriology. Credit 5 (3-4).

**134. Food Bacteriology**

This course is designed to study the role of microorganisms in soil preparation, preservation, and decomposition of various food products. Some consideration is given to the Public Health problem regarding the spread of some diseases from contaminated foods. Credit 4 (2-4).

**144. Dairy Bacteriology**

A general course which considers some of the common organisms associated with normal, and abnormal fermentations of milk. The role of microorganisms in the production and decomposition of various dairy products is also considered. Credit 4 (2-4).

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\*Course to be decided by Head of the Department.

**145. Soil Bacteriology**

This course is designed to study the role of microorganism in soil fertility. Special emphasis is placed on the activity of the nitrogen-fixing bacteria and also those concerned in the decomposition of organic waste materials. Credit 4(2-4).

**BOTANY****111. General Botany**

Plants as living organisms constituting an integrated part of man's environment. General plant structure, general classification, evolutionary tendencies and living processes. Credit 5(3-4).

**112. Plant Taxonomy**

The systematic organization of the plant kingdom. Emphasis on identification and classification of important plant genera and families. Credit 5(3-4).

**121. Elementary Plant Physiology**

The relationship between plant structure and various physiological processes. A general consideration of absorption, nutrition, respiration, growth and reproduction. Credit 3(2-2).

**131. Plant Physiology**

An analysis of complex living processes occurring in plants and an attempt to explain them in terms of chemistry and physics. Credit 4(2-4).

**133. Plant Pathology**

Basic factors governing the development of plant diseases including host-parasite relationships, effect of environment on disease development and the nature of disease resistance. Credit 3(2-2).

**141. Cytology**

The structure and functional organization of protoplasm and its relationship to metabolism, heredity and evolution. Credit 3(1-4).

**Advanced Undergraduates and Graduates****504. Special Problems in Botany**

Open to advanced students in botany for investigation of specific problems. Credit 2 to 5 hours.

**GENERAL SCIENCE****131. The Physical Sciences**

Brief review of the basic concepts of astronomy, geology, meteorology, physics and chemistry. Credit 5(4-2).

**132. The Biological Sciences**

Brief review of general biology, anatomy, physiology, and ecology. Credit 5(4-2).

**ZOOLOGY****111. General Zoology**

This course is designed to give the student a general concept of the basic principles of Zoology and a brief survey of the animal kingdom. Various areas of animal biology are studied, including cellular organization, classification, morphology, and physiology of representative forms from the protozoa through the phylum arthropoda. Ecological relationship of organisms are stressed. Credit 5(3-4).

**112. General Zoology**

This course treats comparatively with representative Mollusca, Echinoderms, and the chordates, and gives the more fundamental training required of Biological Science majors. It is required of all majors with their concentration in zoology. Prerequisite: Zoology 111 or its equivalent. Credit 5(3-4).

**121. Human Anatomy and Physiology**

This course is designed to scientifically inform the student of the general structure and function of the organ systems of man. The laboratory work shall consist of the dissection of the foetal pig and a study of the human skeleton. This course is required of Home Economics majors. Credit 5(3-4).

**122. Invertebrate Zoology**

A comprehensive consideration of the morphology, function, phylogeny, classification and the life histories of representative forms of lower and higher invertebrate groups exclusive of insects. Prerequisites: Zoology 111, 112. Credit 5(3-4).

**123. Comparative Anatomy of the Vertebrate**

A comparative study of chordate organ systems with rather detailed emphasis on the primitive vertebrates, the dogfish and Necturus. A study is also made of the turtle as a representative reptile. Prerequisite: Zoology 112. Credit 5(3-4).

**124. Mammalian Anatomy**

Lectures and detailed laboratory dissections on the cat, dog, foetal sheep and other related mammals as a basis for an understanding of human anatomy. Special emphasis is placed on the study of the myology and osteology of the fore and hind limbs to illustrate fundamental principles of structure and function. Prerequisite: Zoology 123. Credit 4(2-4).

**132. History**

This course will consist of an intensive study of the cell and cellular organization of the tissues and organs of various animals. Prerequisite: Zoology 112 or its equivalent. Credit 5(3-4).

**133. Entomology**

Morphology, identification and classification of insects; economic importance of insects. Credit 3(2-2).

**142. Genetics**

Principles and mechanism of inheritance in plants and animals. Credit 3(3-0).

**143. Vertebrate Embryology**

A study of the developmental stages of selected vertebrates. The materials are treated comparatively and consist of amphibian, bird, rodent, and references to mammalian forms. Prerequisite: Zoology 123 or special consent of instructor. Credit 4(2-4).

**144. Vertebrate Embryology**

This course will be utilized in part for stressing variations in rodent and mammalian development and for applications of experimental embryological procedures. Prerequisite: Zoology 143. Credit 4(2-4).

**Advanced Undergraduates and Graduates****501. Special Problems in Zoology**

Open to students qualified to do research in Zoology. Credit 2 to 3 hours per quarter. Maximum 6 credit hours.

**502. Mammalian Biology**

The study of the evolutionary history, classification, adaptation and variation of representative mammals with special emphasis on the prenatal variations in prototherian, metatherian and eutherian type. Prerequisites: Zoology 111 and Botany 111. Credit 3(2-2).

**503. Biology of Sex**

Lectures on the origin and development of the germ cells and gonads in selected animal types. The evolution of sexuality and sex in protozoans, lower metazoans and vertebrates are discussed. Some consideration is made of the influences of endocrine secretions in altering the normal sex ratio in certain undifferentiated races of amphibians. Prerequisites: Zoology 111, 112 or equivalent. Credit 3(3-0).

**504. Cytology**

An intensive study of the cell with lectures and periodic student reports on modern advances in cellular biology. Prerequisite: 132 or special consent of instructor. Credit 3(3-0).

**505. General Microtechnique**

This course is designed to develop skills in the preparation of cells, tissues and organs for microscopic observation and study. Prerequisites: Zoology 111, 112 or equivalent. Credit 4(2-4).

**506. Nature Study**

A study of diversified organisms, their habits, life histories, defenses, sex relationships, periodic activities and economic values is made to acquaint the student with fundamental knowledge that should lead to a fuller appreciation of nature. Credit 3(3-0).

## **DEPARTMENT OF BUSINESS**

During the first two years the student is expected to lay a broad foundation for later specialization. To secure this end the courses in the freshman and sophomore years have been so selected and grouped as to cover some of the major fields of knowledge pertinent to business.

The Department of Business offers three curricula with variations which make it possible for students to prepare for various kinds of business and teaching positions.

### **GRADUATION REQUIREMENTS**

Candidates for the B.S. degree must complete at least 200 hours of work approved by the Dean including work done in general education. In order that graduates of the Department of Business may have specialized, as well as, broad training, the work is organized under three major departments as follows: (a) Business Administration, (b) Accounting, and (c) Commercial Education.

### **REQUIRED COURSES FOR FRESHMEN AND SOPHOMORES**

English 211, 212, 213 .....	15
Speech, English 224 .....	3
Mathematics 311, 312, 315 .....	15
Music and Art Appreciation (Comm. Ed.) .....	9
Music and Art Appreciation (B.A. and Acct.) .....	6
Physical Education .....	6
Chemistry 111, 112 or Physics 311, 312 .....	10
Comm. Ed. 317, 318, 319 .....	6
History 213, 221 or 222 .....	10
Economics, Ec. 231, 232‡ .....	10
Business Correspondence, B.A. 339 .....	5
Electives* .....	12

‡This course will be taken by Accounting Majors during their Junior year.

\*Men students registering for a major in the Department must satisfy the Military or Air Science requirements.

Students will choose electives to complete a minimum 18-hour schedule for each quarter.

### ACCOUNTING

The following is suggested for those desiring to complete a major in accounting.

This major is recommended for those contemplating a career in accounting or graduate work in this specialized field.

#### Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Business Management, B.A. 351 .....	.....	.....	5 (5-0)
Intermediate Accounting, Acct. 331, 332 ...	5 (5-0)	5 (5-0)	.....
Accounting Systems, Accounting 334 .....	.....	.....	5 (5-0)
Statistics, Math. 318 .....	.....	5 (5-0)	.....
Sociology, Soc. 231 .....	5 (5-0)	.....	.....
Personnel Administration, B.A. 353 .....	.....	.....	5 (5-0)
Economics 231, 232 .....	5 (5-0)	5 (5-0)	.....
Electives .....	3 hrs.	3 hrs.	3 hrs.
	18	18	18

#### Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Principles of Retailing, B.A. 346 .....	.....	5 (5-0)	.....
Commercial Law, B.A. 335 .....	5 (5-0)	.....	.....
Principles of Real Estate, B.A. 357 .....	5 (5-0)	.....	.....
Insurance, B.A. 356 .....	.....	5 (5-0)	.....
Principles of Salesmanship, B.A. 337 .....	.....	.....	5 (5-0)
Governmental Accounting 335 .....	.....	.....	5 (5-0)
Advanced Accounting, Accounting 341 ....	5 (5-0)	.....	.....
Federal Tax Accounting, Accounting 342 ..	.....	5 (5-0)	.....
Auditing, Accounting 343 .....	.....	.....	5 (5-0)
Electives .....	3 hrs.	3 hrs	3 hrs.
	18	18	18

### MAJOR IN BUSINESS ADMINISTRATION

The following is suggested for those desiring to complete a major in the field of business administration.

This major is recommended for those planning to enter one of the practical fields of trade or industry as administrators or office workers.

**Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Business Management, B. A. 351 .....	5 (5-0)	.....	.....
Principles of Retailing, B. A. 346 .....	.....	.....	5 (5-0)
Accounting 321, 322 .....	5 (5-0)	5 (5-0)	.....
Cost Accounting 323 .....	.....	.....	5 (5-0)
Statistics, Math. 318 .....	.....	5 (5-0)	.....
Sociology, Soc. 231 .....	5 (5-0)	.....	.....
Advertising, B. A. 345 .....	.....	5 (5-0)	.....
Economics 233 .....	.....	.....	5 (5-0)
Electives .....	3 hrs.	3 hrs.	3 hrs.
	<hr/>	<hr/>	<hr/>
	18	18	18

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Office Management, B. A. 352 .....	.....	5 (5-0)	.....
Personnel Administration, B. A. 353 .....	.....	.....	5 (5-0)
Commercial Law, B. A. 335 .....	5 (5-0)	.....	.....
Principles of Real Estate, B. A. 357 .....	5 (5-0)	.....	.....
Insurance, B. A. 356 .....	.....	5 (5-0)	.....
Principles of Salesmanship, B. A. 337 .....	.....	.....	5 (5-0)
Labor Problems, Ec. 234 .....	.....	.....	5 (5-0)
Accounting 342 .....	5 (5-0)	.....	.....
Electives .....	3 hrs.	7 hrs.	3 hrs.
	<hr/>	<hr/>	<hr/>
	18	17	18

NOTE: The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with the student's adviser.

**Suggested Electives**

General Psychology	Eng. 244, 231
Accounting	Ec. 254
Education to satisfy certification requirements	

**MAJOR IN COMMERCIAL EDUCATION****Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Principles of Retailing, B. A. 346 .....	.....	.....	5 (5-0)
Accounting, Acct. 321, 322 .....	5 (5-0)	5 (5-0)	.....
Shorthand, C. Ed. 314, 315, 316 .....	5 (5-0)	5 (5-0)	5 (5-0)
Mathematical Statistics, Math. 318 .....	.....	.....	5 (5-0)

Adolescent Psychology, Ed. 223 .....	3 (2-2)	.....	.....
Educational Psychology, Ed. 231 .....	.....	3 (3-0)	.....
Educational Philosophy, Ed. 224 .....	.....	3 (3-0)	.....
Introduction to Education, Ed. 222 .....	3 (3-0)	.....	.....
Electives* .....	3 (3-0)	3 (3-0)	3 (3-0)
	<hr/>	<hr/>	<hr/>
	19	19	18

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Office Management, B. A. 352 .....	.....	5 (5-0)	.....
Commercial Law, B. A. 335 .....	5 (5-0)	.....	.....
Secretarial Studies, C. Ed. 323 .....	.....	6 (2-8)	.....
Advanced Stenography, C. Ed. 322a, b .....	5 (2-6)	.....	.....
Office Training, C. Ed. 321a, 321b .....	2 (2-0)	.....	6 (0-13)
Office Appliances, C. Ed. 324 .....	.....	2 (0-4)	.....
Principles of Secondary Education, Ed. 237 .....	3 (3-0)	.....	.....
Evaluation and Measurement, Ed. 236 .....	.....	3 (2-2)	.....
Electives* .....	5 (5-0)	5 (5-0)	5 (5-0)
	<hr/>	<hr/>	<hr/>
	20 hrs.	21 hrs.	11 hrs.

**Suggested Electives\***

Education 250, Methods of Teaching Business Subjects  
 Education 251, Observation and Practice teaching  
 Phy. Ed. 234, Personal and Community Hygiene

\*These electives should be included by persons wishing to be certified to teach in the State of North Carolina.

NOTE: The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with the student's adviser.

**SUGGESTED PROGRAM FOR SECRETARIES  
AND STENOGRAPHERS**

**Two-Year Course**

Eng. 211, 212, 213 .....	15 hrs.
Math. 311, 312, 315 .....	15 hrs.
C. Ed. 314, 315, 316 .....	15 hrs.
C. Ed. 317, 318, 319 .....	6 hrs.
C. Ed. 321, 322, 323 .....	19 hrs.
B. A. 339 .....	5 hrs.
Phys. Ed. .....	6 hrs.
B. A. 352 .....	5 hrs.
Electives .....	15 hrs.

This course is carefully planned for the purpose of training prospective candidates for various stenographic, typing, and clerical positions. Under immediate supervision students are trained to do simple routine work requiring care and accuracy in details. Special attention will be given to instruction in preparation for Civil Service examinations.

## COURSES IN ACCOUNTING, BUSINESS ADMINISTRATION AND COMMERCIAL EDUCATION

### Courses in Accounting

#### **321. Introductory Accounting (Formerly B.A. 332)**

A study of the fundamental principles of accounting, embracing the theory of double-entry system recording and its application to business transactions through the complete accounting cycle. Credit 5(5-0).

#### **322. Introductory Accounting (Formerly B.A. 333)**

Continuation of Accounting 321. Emphasis is placed on accounting techniques as they apply to proprietorships, partnerships, and corporations. Also, an introduction is given to special corporate accounts, manufacturing and departmental operations. Prerequisite: Accounting 321. Credit 5(5-0).

#### **323. Cost Accounting (Formerly B.A. 341)**

A study of the elements and principles of cost accounting as applied to job lot, process, and standard costs systems. Emphasis is placed on accounts as a means of managerial control. Prerequisite: Accounting 321, 322. Credit 5(5-0).

#### **331. Intermediate Accounting (Formerly B.A. 334)**

This course gives advanced training in the theory of accounts, recording of accounting data, and preparation of accounting statements. Prerequisite: Accounting 321, 322, 323. Credit 5(5-0).

#### **332. Intermediate Accounting**

Continuation of Accounting 331 with emphasis on analysis and interpretation of accounting data. Prerequisite: Accounting 331. Credit 5(5-0).

#### **334. Accounting Systems**

A study of accounting features peculiar to various businesses, contractors, department stores, loan companies and associations, banks, insurance companies, brokerage firms, and utilities. Prerequisite: Accounting 321, 322, 323. Credit 5(5-0).

#### **335. Governmental Accounting**

Accounting for institutional and governmental units. Financial administration of funds, appropriations and budgets. Prerequisite: Accounting 321, 322, 323. Credit 5(5-0).

**341. Advanced Accounting**

Special advanced training in accounting techniques utilized in partnership accounting, special sales procedures, consolidations, fiduciary and budgetary accounting, and actuarial science. Prerequisite: Accounting 331, 322. Credit 5(5-0).

**342. Federal Tax Accounting**

A study of Federal income tax laws in relation to accounting and the preparation of tax returns for individuals and corporations. Prerequisite: Accounting 321, 322, 323. Credit 5(5-0).

**343. Auditing (Formerly B.A. 343)**

The legal responsibilities, the principles, and the practical procedure in the conduct of an audit and making an audit report. Prerequisite: Accounting 341 or concurrent enrollment therein. Credit 5(5-0).

**Courses in Business Administration****335. Commercial Law**

Sales of personal property, bailment, common carriers, agency, master and servant, partnership, contracts, corporation, insurance, landlord and tenant, etc. Credit 5(5-0).

**337. Principles of Salesmanship**

This course is based upon actual experience of men successful in the field of salesmanship. It develops the subject from sound economics, philosophical, and psychological points of view. Economics of salesmanship is presented so that the student may see where the work performed is justifiable and necessary in the economic regime. The course includes psychology so that the student may more readily adjust himself to actual sales conditions and learn why some men and ideas succeed while others fail. Credit 5(5-0).

**339. Business Correspondence**

This course makes a thorough and practical analysis of all forms of business letters and gives constructive information on how to write letters that convince, whether they be sales letters, follow-up letters, form letters, complaints, collection and application letters. This course is required of all students in Business. Prerequisites: Eng. 211, 212; C. Ed. 318. Credit 5(5-0).

**345. Advertising**

This is a study of the techniques used in the preparation of advertising copy and the part advertising plays in business; advertising campaigns, budgets, and media. Credit 5(5-0).

**346. Principles of Retailing**

This course aims to cover the high points in the retail process of marketing as it is applied especially to the small independent store. Modern grocery and other smaller stores will be used as examples. Detailed studies will be made of store management, finance, and control, and marketing. Credit 5(5-0).

**351. Business Management**

Business Management covers the fundamentals of industrial organization and operation and helps the student to gain that basic knowledge of business which should be part of the equipment of every businessman. Credit 5(5-0).

**352. Office Management**

This course covers the principles and methods employed in departmental and centralized offices. Special attention is given to office layout, office system, equipment, selecting workers and general office service. Credit 5(5-0).

**353. Personnel Administration**

This is a comprehensive course dealing with the principles and practices in the administration of employees of commercial and industrial establishments. This course is very practical, giving the student a view of personnel as the businessman sees it. Credit 5(5-0).

**356. Insurance**

This course is a survey in a general way of the whole field of insurance. It deals with the nature and statistical basis of different kinds of insurance as property insurance, straight life, endowment, accident, industrial, old age, fire, livestock, etc. The function of publicity and the need of educating the public in the principles and services of insurance receive much attention. Credit 5(5-0).

**357. Principles of Real Estate**

This course deals with real estate as a profession, classes of property—suburban, apartment, industrial, farm and resort—rentals, leasing, the work of the brokers, property management and financing. Credit 5(5-0).

**COURSES IN COMMERCIAL EDUCATION****314. Shorthand**

This course includes a study of wordbuilding and the general principles outlined in the Gregg Shorthand manual (simplified) and speed studies. Prerequisite: Eng. 210. Credit 5(5-0).

**315. Shorthand**

This course is a continuation of 314 and with added emphasis on transcription of simple letters and documents. Prerequisite: 314. Credit 5(5-0).

**316. Shorthand**

The principles are included early in this course and emphasis is placed on difficult dictation and transcription, speed tests and reporting speeches. Prerequisite: 315. Credit 5(5-0).

**317. Typewriting**

The typewriting course covers a working knowledge of the use of all parts of the typewriter, a thorough command of the keyboard by means of the touch system, rhythmic drills, practice in writing words, etc. Credit 2(0-5).

**318. Typewriting**

This course is concerned with tests and drills for speed and accuracy in the transcription of easy material from printed matter. Prerequisite: 317. Credit 2(0-5).

**319. Typewriting**

Technical typewriting is emphasized in this course by allowing the student to spend most of his time on tabulation, stencil cutting, report making and other practical duties. Prerequisite: 318. Credit 2(0-5).

**321a, 321b. Office Training**

Students will be required to do 13 hours practice work per week in the offices and plants of the College and in and around Greensboro for a period of one quarter. A study is also made of the executive work connected with offices of many types. Two hours each week are devoted to discussion of the various problems found in these offices. Prerequisite: C. Ed. 232. Credit 8(2-13). Credit, lecture alone, 2(2-0). Laboratory alone, 6(0-13).

**322a, 322b. Advanced Stenography and Typing**

This course is an intensive review of techniques in typing and shorthand for the purpose of developing speed. Emphasis is placed on the advanced rates of typing to meet job requirements, advanced dictation take rates and transcription rates. Two hours each week are devoted to speed and production typing and three hours each week to speed-building in shorthand and transcription. Minimum rates for course credit are 60 w.p.m. in typing and 100 w.p.m. in shorthand. The rates attained in the course will be recorded on the student's permanent record. Prerequisites: Com. Ed. 316, 319. Credit 5(2-6). Credit 322a 2(2-0); 322b 3(0-6).

**323. Secretarial Studies**

This course deals with the qualification, duties, responsibilities and work of a secretary. The other points considered are: Managing callers, handling correspondence, locating sources of information, making appointments, and other routine and special duties in systematizing the office. Prerequisite: C. Ed. 316, 319, 322. Eng. 213. Credit 6(2-8).

### 324. Office Appliances

The purpose of the course is to give the student a general working knowledge of the leading office machinery and equipment. Students will be instructed in the use of adding, calculating, duplicating, name and data writing, billing, miscellaneous labor-saving and bookkeeping machines. This course can be given any quarter at the discretion of the instructor. Prerequisite: C. Ed. 319. Credit 2(0-4).

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## DEPARTMENT OF CHEMISTRY

The Department of Chemistry offers courses required in the various curricula of the college. For the most part the courses are made up of subject matter that is organized in step-wise sequence and students should therefore take the courses in this order.

A minimum of 55 quarter hours, including general chemistry, is required for a major in chemistry. Additional requirements in related courses include 10 quarter hours in general physics, and mathematics through integral calculus.

For a major in biochemistry a minimum of 35 quarter hours in chemistry, including physical chemistry and an additional 25 quarter hours consisting of biochemistry, plant physiology and animal nutrition are required.

A student who elects chemistry as his major should plan his program for the junior and senior years in conference with the Head of the Chemistry Department.

## CURRICULUM IN CHEMISTRY

### Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 111, 112, 113 .....	5 (3-4)	5 (3-4)	5 (3-4)
English 211, 212, 213 .....	5 (5-0)	5 (5-0)	5 (5-0)
Math. 311, 312, 313 .....	5 (5-0)	5 (5-0)	5 (5-0)
Education 211 .....	1 (1-0)	.....	.....
Military or Air Science 211, 212, 213 .....	2 (1-2)	2 (1-2)	2 (1-2)
Physical Education 210a, 210b, 210c .....	1 (0-2)	1 (0-2)	1 (0-2)
	<hr/>	<hr/>	<hr/>
	19 hrs.	18 hrs.	18 hrs.

**Sophomore Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 121, 122, 123 .....	4(2-6)	4(2-6)	4(2-6)
Math. 321, 322, 323 .....	5(5-0)	5(5-0)	5(5-0)
English 220 or 223 .....	5(5-0)	.....	.....
Botany 111 .....	.....	5(3-4)	.....
Zoology 111 .....	.....	.....	5(3-4)
Military Science 221, 222, 223 .....	2(1-2)	2(1-2)	2(1-2)
Physical Education 220a, 220b, 220c .....	1(0-2)	1(0-2)	1(0-2)
	<hr/>	<hr/>	<hr/>
	17 hrs.	17 hrs.	17 hrs.

**Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 131, 132, 133 .....	5(3-6)	5(3-6)	5(3-6)
Physics 321, 322, 323 .....	5(4-2)	5(4-2)	5(4-2)
French 211, 212, 213 .....	5(5-0)	5(5-0)	5(5-0)
Electives in Minor .....	3( )	3( )	3( )
	<hr/>	<hr/>	<hr/>
	18 hrs.	18 hrs.	18 hrs.

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chemistry 141, 142, 143 .....	5(3-6)	5(3-6)	5(3-6)
Chemistry 145 .....	5(3-4)	.....	.....
Electives .....	8( )	11( )	11( )
	<hr/>	<hr/>	<hr/>
	18 hrs.	16 hrs.	16 hrs.

**NOTE:**

1. It is suggested that chemistry majors choose as a minor either mathematics or physics.
2. Students may enroll for either Chemistry 121 or 131 after satisfactory completion of Chemistry 113.

**BIOCHEMISTRY****134. General Agricultural Biochemistry**

Introductory organic chemistry with application to plant and animal life. Prerequisite: Chem. 131. Credit 5(3-6).

**135. Physiological Chemistry**

Composition and action of special vitamins, hormones, enzymes and minerals in metabolism. Designed especially for foods and nutrition majors and pre-medical students. Prerequisite: Biochem. 134, or permission of instructor. Credit 5(2-6).

**147. General Biochemistry**

Brief review of the literature and history of biochemistry; colloidal chemistry of biological materials; hydrogen ion concentration; the chemical composition of plants and animals with special reference to lipids, carbohydrates, proteins and enzymes. Prerequisite: Biochem. 135. Credit 5(5-0).

**148. Official Methods of Analysis**

Methods used in chemical analysis of foods and feeds as set forth by the Association of Official Agricultural Chemists. Chemistry of the methods, and interpretation of the results of analysis of cereal foods, milk products and animal feeds. Prerequisite: Chem. 133 and Biochem. 147. Credit 5(2-6).

**Graduates and Advanced Undergraduates****505. Special Problems in Biochemistry**

Problems in either plant or animal nutrition. Development of procedures and methods for isolation and synthesis of naturally occurring plant or animal constituents. Credit 2 to 6 hours.

**506. Plant Biochemistry**

Chemical composition of plants; methods of detailed analysis of active constituents of fresh and dried plant materials. Prerequisite: Biochemistry 148. Credit 5(2-6).

**CHEMISTRY****111. General Chemistry**

Introduction to fundamental laws of matter that govern physical and chemical changes; classification of matter, a study of oxygen, hydrogen, simple compounds, nomenclature, atomic and molecular theories; valence. Credit 5(3-4).

**112. General Chemistry**

Properties, reactions and uses of important non-metallic elements; atomic structure, periodic functions and classification of elements; radioactivity, solutions and electrolytes. Prerequisite: Chemistry 111. Credit 5(3-4).

**113. General Chemistry**

Metals, metallurgy, properties and uses; metallic ions in solution and arrangement in groups; ionic equilibrium, exidation-reduction reactions. Prerequisite: Chemistry 111 and 112. Credit 5(3-4).

**121. Qualitative Analysis**

Fundamental principles of analysis; preliminary experiences given to illustrate chemical principles; practice in equation writing, and in-

terpretation of experimental results. Slags and alloys of unknown composition are analyzed. Prerequisite: Chem. 111 and 112. Credit 4(2 6).

### **122. Quantitative Analysis**

Volumetric methods of analysis, placing emphasis upon physiochemical principles. Prerequisite: Chem. 121. Credit 4(2-6).

### **123. Quantitative Analysis**

A gravimetric analysis. Prerequisite: Chem. 122. Winter. Credit 4(2-6).

### **131. Organic Chemistry**

Introduction to carbon chemistry; a study of aliphatic compounds, saturated and unsaturated; nomenclature and simple synthesis. Fall. Credit 5(3-4).

### **132. Organic Chemistry**

Aromatic compounds. Prerequisite: Chem. 131. Winter. Credit 5(3-6).

### **133. Advanced Organic Chemistry**

Systematic identification of organic compounds with reference to the limitation of organic test reagents. Prerequisite: Chem. 131 and 132. Credit 5(3-6).

### **141. Physical Chemistry**

Physical and theoretical aspects of chemistry dealing with atomic and molecular concepts of matter, the properties of gases, liquids and solids. Prerequisite: Physics 323, Math. 321 and 322. Credit 5(3-6).

### **142. Physical Chemistry**

First and second laws of thermodynamics, thermochemistry, free energy, entropy, chemical equilibrium and phase equilibrium. Prerequisite: Chem. 141. Credit 5(3-6).

### **143. Physical Chemistry**

Kinetics of chemical reactions, electromotive force, conductance, surface chemistry and colloids. Prerequisite: Chem. 142. Credit 5(1-4).

### **145. Introduction to Chemical Research**

Designed to train students in the use of library and laboratory facilities. Required of all majors in chemistry. Prerequisite: Advanced standing in chemistry. Credit 5(1-4).

### **146. Chemical Engineering**

Thermal properties of matter and energy relationships underlying chemical and physical processes; the first law of thermodynamics as applied to batch and flow processes, combustion, thermal control, etc. Prerequisite: Chem. 141, and Math. 321. Credit 4(4-0).

**Advanced Undergraduates and Graduates****501. Chemical Literature Study**

Familiarization and uses of chemical periodicals, abstracts, dictionaries and research journals, introducing techniques used in research. Prerequisite: Chem. 131 and 132. Fall and Spring. Credit 2(1-2).

**502. Minor Research Problems**

Designed to familiarize students with library and library facilities in conducting a research problem. The problem may be selected in the area of chemistry of interest to the student. Registration only by permission of the instructor. Credit 3-6 hours.

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**DEPARTMENT OF EDUCATION****PROFESSIONAL REQUIREMENTS FOR TEACHERS CERTIFICATES**

The North Carolina Department of Public Instruction establishes requirements for certification in the public schools of the State and persons desiring to qualify for a teacher's certificate should familiarize themselves with the state department requirements which are subject to change from time to time.

The College cannot and does not set up state department certification requirements but it can advise and cooperate with students in planning their course of study so as to include the necessary professional courses. In order to avoid unnecessary delay and inconvenience, students interested in meeting these requirements should make application to the head of the department of education in their sophomore year.

The professional education courses required for persons desiring a state teacher's certificate are designed to provide understanding, knowledges, skills and experiences which relate to the art and science of teaching. The professional courses in education are organized around three areas: The pupils; the school; and methods, observation, and practice teaching. The student who desires to meet the requirements for teacher certification in the high schools of North Carolina should complete a minimum of nine quarter hours in each of these areas. The student is required to complete the minimum requirements in the areas "The Pupil" and "The School" before he is eligible for credit in Methods, Observation and Practice Teaching, unless special permission is granted by the dean of the school in which the student is enrolled.

NOTE: State teachers' certificates are not issued by the College, but by the State Department of Public Instruction. Persons interested in securing a certificate to teach in the Public Schools of this State should contact the Division of Certification, State Department of Public In-

struction, Raleigh, North Carolina, immediately after graduation. Certificates are issued only to persons who have graduated from a standard class "A" college and who have had the necessary professional courses.

The following are courses in each of the three major areas required in Professional Education:

#### THE PUPIL

Adolescent Psychology, Ed. 223 .....	3 (2-2)
Educational Psychology, Ed. 231 .....	3 (3-0)
Introduction to Guidance, Ed. 233 .....	3 (2-2)
or	
Evaluation and Measurements, Ed. 236 .....	3 (2-2)
Electives: Field-Laboratory Experiences in Education, Ed. 234..2 (½-3)	
Mental Hygiene, Ed. 226 .....	5 (5-0)

#### THE SCHOOL

Introduction to the Study of Education, Ed. 222 .....	3 (3-0)
Philosophy of Education, Ed. 224 .....	3 (3-0)
Principles of Secondary Education, Ed. 237 .....	3 (3-0)

#### METHODS, OBSERVATION AND DIRECTED TEACHING

Materials and Methods of Teaching, Ed. 243, 245, 246, 247, 248, 249, 250 .....	5 (5-0)
(The particular methods course to be pursued by the student will be determined by his or her major or minor subject.)	
Directed Teaching, Ed. 251 .....	5 (2-6)

Those desiring to pursue professional courses in teaching will be required to undergo counseling for the purpose of determining their capacity for profiting from the professional curriculum. After successful completion of one or two courses in professional education, students desiring teacher certification will be required to file a formal application in writing with the dean of their respective school. It is not recommended that students apply for the teacher education curriculum if the average grade in the field in which they plan to teach is less than "B".

### COURSES IN EDUCATION

#### FOR UNDERGRADUATES

##### 211. Orientation

This course consists of lectures and discussions designed to provide the student with functional insight into methods of improving study, taking notes, and using the library. It introduces the student to various broad groups of vocations. Effective matching of individual qualifications and significant occupational requirements will be considered. Any quarter. Credit 1(1-0).

**212. Driver Education**

Teaching traffic safety and automobile operation. Critical analysis of highway accidents; common practices of safety drivers; essential knowledge of automobile mechanism; and practical driving. Lecture, 2 hours, practicum, 3 hours. Credit, 3 hours.

**213. Safety Education**

Safety in the home, farm, school, highway, and industry. Studies of the common accidents in these areas, and some solutions. The course will bring representatives of Fire Department, Highway Department, Health and Recreation to assist with topics. Credit, 3(3-0).

**221. General Psychology**

The objectives of this course are to acquaint the student with what psychology is, what it aims to do, how its data are gathered, and the principles of human behavior which it attempts to describe. This course will not be counted to meet the specific requirements in education for a high school teacher's certificate. Fall, Winter, Spring. Credit 5(5-0).

**222. Introduction to the Study of Education**

This course is designed to give the student an overview of the historical background of the systems of education in the United States, their aims, organization and procedures, and of the principles and practices on all levels of the American educational system. Consideration is given to qualifications for teaching with emphasis on the requirements of the state of North Carolina. Requirements of all students planning to qualify for a teaching certificate in North Carolina. Credit 3(3-0).

**223. Adolescent Psychology**

This course is designed to give the student a comprehensive survey of the pre-adolescent growth, development and maturation; and an intensive study of the physical, mental, emotional, social and moral growth through adolescence. Situations of a laboratory nature, in which the student might observe and record, classify and interpret the behavior of adolescents will be selected from the available facilities on the campus and in the community. Credit 3(2-2).

**224. Philosophy of Education**

The general aim of this course is to acquaint the student with a unified view of the whole educative process, in the light of modern Biology, Psychology, and Sociology, with emphasis on the philosophical bases and implications as they relate to the pupil, curriculum, teacher, and the institution. Credit 3(3-0).

**225. Audio-Visual Laboratory**

Practical experiences in the operation and maintenance of projectors, recorders, radios, television sets, etc. Laboratory fee \$2.00. Credit 3(2-2).

**226. Mental Hygiene**

The aim of this course is to help students gain a better understanding of the factors influencing optimum adjustment of the individual. Major emphasis will be placed upon basic principles of adjustment and mental hygiene, varieties of adjustment, personality development, and psychotherapy in theory and in practice. Prerequisite: Ed. 221 and 223. Credit 5(5-0).

**231. Educational Psychology**

This course is designed to acquaint the student with the basic problems underlying the psychology of education. Its major topics include individual differences, the development of personality, motivation of learning and development, the nature of learning and the procedures which best promote its efficiency. Prerequisite: Ed. 223. Credit 3(3-0).

**233. Introduction to Guidance**

This course is designed to introduce the student to various systems of individual and group guidance, with special reference to the secondary school. The student will be required to develop and to defend his philosophy of guidance, by means of the best available evidence gleaned from experimentation and controlled observation at either on or off-campus agencies. Special attention will be paid to the development of theory and practice for handling special cases of learning deficiencies in reading, speech, writing, and mathematics. In the laboratory, the student will be introduced to practical guidance materials and to a variety of situations designed to bring into bold relief some of the fundamental promises of guidance. Prerequisite: Ed. 231. Credit 3(2-2).

**234. Field-Laboratory Experiences**

This course is designed to place the student in position to summon, organize, and supply to the task of helping individuals learn, all the resources of the school and community. The student will apply his mastery of the fundamental theoretical concepts essential to opening insight into behavior, to real situations in the field, provided by various community agencies. The student will be expected to show progressive growth and maturation for handling children of different ages in, and from, different settings. Credit 2(½-3).

**236. Measurement and Evaluation**

In this course special attention will be paid to a variety of standardized and teacher-made measuring devices, to acceptable methods of selecting, administering, and interpreting all types of tests applicable to the school and classroom. Extensive practice in the administration and interpretation of selected tests, will be provided in a laboratory setting. Prerequisite: Education 221, 223, 231. Credit 3(2-2).

**237. Principles of Secondary Education**

This course is designed to provide the student with an understanding of the history, nature and function of the secondary school and its relationship to the elementary school and adult life. Major consideration will be given to the development of the secondary school, aims and functions of secondary education, characteristics of the secondary school pupil, and curriculum, the high school teacher, guidance, teaching load and professional ethics. Prerequisite: Ed. 222 and Ed. 224, Ed. 233 or 236. Credit 3(3-0).

**241. Special Methods**

This course is designed to assist the student in gaining an understanding of the use of special teaching methods, techniques, devices, and materials related to each of the special fields of teaching. Opportunity for students to observe classes and teachers at work will be provided. Open only to seniors. Prerequisite: Ed. 231, 237. Fall and Winter. Credit 5(5-0).

**243. Methods of Teaching English**

A study of materials and methods of teaching English in the high school. Required of those planning to teach English. Prerequisites: Forty hours of English, Ed. 231, and 237 or 238. Fall and Winter. Credit 5(5-0).

**245. Methods of Teaching Social Sciences**

Designed to provide the student with an understanding of the place of Social Sciences in high school and to assist him in understanding the techniques of social science instruction on the high school level. Required of those planning to teach the subject. Prerequisites: Forty hours of Social Studies, Ed. 231, and 237 Fall and Winter. Credit 5(5-0).

**246. Methods of Teaching Mathematics**

A course which deals with the evaluation of subject matter, materials, methods and techniques, and objectives in the teaching of mathematics in the junior and senior high school. Required of those planning to teach the subject. Prerequisite: 30 hours of Mathematics: Ed. 231, 237. Fall and Winter. Credit 5(5-0).

**247. Methods of Teaching Modern Languages**

This course is devoted to a study of the problems and difficulties experienced in teaching Foreign Languages. Special attention is given to the matter of classroom aids, equipment, etc. Required of those students planning to teach languages. Prerequisite: 40 hours of French; Ed. 231 and 237. Fall and Winter. Credit 5(5-0).

**248. Methods of Teaching Art**

A study of the aims and objectives, methods and techniques of art teaching in the modern school. Special attention is given to planning courses of study, presentation, selection of equipment, reference and illustrative material and correlation. Considerable emphasis is placed on blackboard drawings. Required of those wishing to qualify as art teachers. Prerequisite: 45 hours of Art; Ed. 231, 237. Fall and Winter. Credit 5(5-0).

**249. Methods of Teaching Science**

A study of modern methods, materials and techniques of teaching such subjects as biology, chemistry, physics, and general science in the high school. Required of all those planning to teach in this field. Prerequisites: Forty hours of Science, Ed. 231, and Ed. 237. Fall and Winter. Credit 5(5-0).

**250. Methods of Teaching Commercial Subjects**

Organization, preparation and care of materials, followed by an analysis of the methods of procedure, standards and objectives of the teacher of commercial subjects in high school. Students may be admitted to this course only upon the recommendation of the head of the Department of Commercial Education. Fall and Winter. Credit 5(5-0).

**251\*. Directed Teaching**

This course is designed to provide the students an opportunity to put to use methods, techniques, and materials of instruction in a real classroom situation under supervision. Prerequisites: Ed. 241, an average grade of "B" or above in the field in which directed teaching is to be done. Maximum load, including Ed. 251, will be 13 hours. Fall, Winter and Spring. Credit 5(2-6).

**501. Introduction to Audio-Visual Education**

This course aims to orientate the student to the basic principles and practices of audio-visual aids for use in classroom instruction. Laboratory fee \$2.00. Credit 3(1-4).

**502. Constructing Audio-Visual Materials**

Constructing and designing audio-visual aids materials for the classroom use. Laboratory fee \$2.00. Credit 3(1-4).

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\*All students planning to teach are required to spend at least sixty clock hours in practice teaching in the type of school in which they plan to work. Students should schedule this course only after consultation with the director of practice teaching. In no instance will a student be permitted to carry more than thirteen hours (including Education 251) during the quarter this course is scheduled.

## DEPARTMENT OF ELECTRICAL ENGINEERING

The curriculum of the Department of Electrical Engineering provides comprehensive training in the fundamental sciences—mathematics, physics, chemistry—with selected courses in the humanities designed to develop well-rounded engineers.

The required courses in electrical engineering which are offered by the Department may be mentioned briefly. Electrical power engineering has to do with the theoretical and practical phases of power generation, distribution, and utilization. Electrical communication deals with the transmission of signals, speech, music, and pictures by open-wire lines, cables, and radio. Electronics is concerned with the statistical behavior of electrons and ions in various types of electrical equipment.

Throughout the various courses the teaching of theory and its modifications by practice, the development of an analytical judgment, and the acquiring of a fundamental scientific background are emphasized.

### CURRICULUM

#### Freshman Year

(See First Year's Curricula of Engineering, Page 67)

#### Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 321, 322, 323 .....	5 (5-0)	5 (5-0)	5 (5-0)
Physics 321, 322, 331 .....	5 (3-4)	5 (3-4)	5 (4-2)
E. E. 324, 325, 326 .....	5 (3-4)	5 (3-4)	5 (3-4)
Air or Military Science 221, 222, 223 .....	2 (2-2)	2 (2-2)	2 (2-2)
M. E. 323 .....	3 (0-6)	.....	.....
Machine Shop 328 .....	.....	2 (0-4)	.....
M. E. 327 .....	.....	.....	3 (3-0)
	<hr/>	<hr/>	<hr/>
	20 hrs.	19 hrs.	20 hrs.

#### Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
E. E. 331, 332, 333 .....	3 (3-0)	3 (3-0)	5 (3-4)
E. E. 334, 335, 336 .....	3 (1-4)	3 (1-4)	3 (3-0)
M. E. 331, 332, 333 .....	5 (5-0)	5 (5-0)	5 (5-0)
Math 331 .....	5 (5-0)	.....	.....
Econ. 231 .....	.....	5 (5-0)	.....
M. E. 321 .....	.....	.....	3 (2-2)
*Elective .....	5 ( )	4 ( )	3 ( )
	<hr/>	<hr/>	<hr/>
	21 hrs.	20 hrs.	19 hrs.

<b>Course and No.</b>	<b>Senior Year</b>	<b>Fall</b>	<b>Winter</b>	<b>Spring</b>
E. E. 346, 347, 348 .....	4 (3-3)	4 (3-3)	4 (3-3)	
E. E. 355, 356, 357 .....	4 (3-3)	4 (3-3)	4 (3-3)	
E. E. 360, 361 .....	.....	3 (3-0)	3 (3-0)	
Econ. 234 .....	5 (5-0)	.....	.....	
Phy. 332 .....	5 (5-0)	.....	.....	
M. E. 336 .....	.....	5 (5-0)	.....	
M. E. 337 .....	.....	.....	3 (3-0)	
*Elective .....	3 ( )	3 ( )	3 ( )	
		21 hrs.	19 hrs.	17 hrs.

\*Suggested Electives:

- Math. 324
- English 224, 244
- Machine Shop 329
- M.E. 341, 317, 339
- Math. 501, 506
- Phy. 333, 337, 352
- E.E. 351, 354

## COURSES IN ELECTRICAL ENGINEERING

### 321. Basic Electrical Engineering I

A comprehensive coverage of electrical engineering fundamentals and applications for non-electrical engineering students. Elementary D. C. circuits; D. C. machinery; coordinated laboratory work. Prerequisites: Phy. 323, Math. 323. Credit 5 (3-4).

### 322. Basic Electrical Engineering II

A continuation of E.E. 321. A. C. machinery theory; electron tubes and circuits; electrochemical processes; coordinated laboratory work. Prerequisites: E. E. 321. Credit 5 (3-4).

### 323. Basic Electrical Engineering III

A continuation of E. E. 322. Electric motor applications; electrical illumination; industrial measurement and control; electrical communication; coordinated laboratory work. Prerequisite: E. E. 322. Credit 5 (3-4).

### 324. Introduction to Electrical Engineering I

A fundamental course in electrical concepts and units, network concepts and units, with coordinated laboratory work for electrical engineering students. Corequisites: Phy. 321, Math. 321. Credit 5 (3-4).

### 325. Introduction to Electrical Engineering II

A continuation of E. E. 324. Magnetic concepts and units, electromagnetic forces, motional electromagnetic forces. Coordinated laboratory. Prerequisites: E. E. 324. Credit 5 (3-4).

**326. Introduction to Electrical Engineering III**

A continuation of E. E. 325. Electric fields and concepts, capacitance, electrochemistry, introduction to electronics. Prerequisites: E. E. 325. Credit 5(3-4).

**331. Electric Circuit Analysis I**

Electric circuit theory, parameters, and calculations; magnetic circuit and dielectric circuit theory and calculations. Prerequisites: Math. 323, Physics 323, E. E. 326. Credit 3(3-0).

**332. Electric Circuit Analysis II**

Vector Algebra as applied to A. C. circuit analysis, periodic functions; A. C. circuit parameters, theory and calculations. Prerequisite: E. E. 331, E. E. 334. Credit 3(3-0).

**333. Direct Current Machinery**

Principles, characteristics and operation of direct current apparatus. Laboratory work coordinated with class-room study. Required of Juniors in E. E. Prerequisites: E. E. 332. Credit 5(3-4).

**334. Electrical Measurements I**

Theory and operation of wheatstone bridges, ballistic galvanometers, potentiometers, various methods of measuring direct current network parameters. Credit 3(1-4). Prerequisite: E. E. 326, or Physics 331, Math. 323, Physics 323. Corequisite for E. E. students, E. E. 331.

**335. Electrical Measurements II**

A. C. bridges, measurement of power, A. C. circuit parameters, magnetic measurements. Credit 3(1-4). Prerequisite: E. E. 334. Corequisite: E. E. 332.

**336. Principles of Electric and Magnetic Fields**

Basic electric fields, basic magnetic fields, elementary electron ballistics. Prerequisites: E. E. 332, Math. 331. Credit 3(3-0).

**346. Applied Electronics**

A study of electron ballistics and emission as applied to vacuum tubes, gas filled tubes, and specialized tubes. Coordinated laboratory work. Prerequisites: Math. 331, E. E. 336. Credit 4(3-3).

**347. Radio Engineering I**

The application of vacuum tubes to radio circuits; small signal amplifiers; radio and audio amplifiers; oscillating systems. Coordinated laboratory work. Prerequisite: E. E. 346. Credit 4(3-3).

**348. Radio Engineering II**

A continuation of E. E. 347. Modulation and demodulation systems; wave-shaping systems, receiving and transmitting systems. Coordinated laboratory work. Prerequisite: E. E. 347. Credit 4(3-3).

**351. Power Transmission Lines**

Long distance transmission of power. Determination of distributed line parameters; general circuit constants and equations; circle diagrams as applied to long distance power lines. Prerequisites: E. E. 332, Math. 331. Credit 5(5-0).

**354. Radio Circuits**

Special topics and laboratory work of special interest to the student. Most of the work is given by the project method. Credit 5(1-8). Pre-requisite: E. E. 346.

**355. Alternating Current Apparatus I**

Principles, characteristics, and operation of alternating current apparatus. Application of circuital theory to a-c machinery; characteristics of single and polyphase transformers. Coordinated laboratory work. Prerequisite: E. E. 332. Credit 4(3-3).

**356. Alternating Current Apparatus II**

A continuation of E. E. 355. Theory and characteristics of single and three phase induction machinery. Coordinated laboratory work. Prerequisite: E. E. 355. Credit 4(3-3).

**357. Alternating Current Apparatus III**

A continuation of E. E. 356. Theory and characteristics of synchronous machines; power inverters and rectifiers. Coordinated laboratory work. Prerequisite: E. E. 356. Credit 4(3-3).

**360. Electromagnetic Wave Theory I**

A study of the fundamental electronic circuit concepts and their applications to microwave tubes; the analysis of transmission lines and networks at high frequencies. Prerequisite: E. E. 336. Corequisite: E. E. 347. Credit 3(3-0).

**361. Electromagnetic Wave Theory II**

A continuation of E. E. 360. Maxwell's equations and their application in the analysis of wave propagation; reflecting phenomena; wave guides and radiating systems. Prerequisite: E. E. 360. Credit 3(3-0).

## **DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE**

### **AIMS OF THE DEPARTMENT OF ENGLISH**

The objectives of the department of English are as follows:

1. To develop in students the skills and techniques of effective writing, reading, and speaking.
2. To lead students to the realization that a mastery of the tools of communication contributes to achievement in all fields of major concentration and to success in all phases of living.
3. To equip students with adequate subject-matter background for the effective teaching of English and with the skills essential to the attainment of related vocational objectives.
4. To cultivate in students an appreciation for literature; to develop ability to interpret it readily; to stimulate a taste and desire for wide reading of the best forms of literature.
5. To prepare and train students for graduate study in English.

### **GENERAL REQUIREMENTS**

All freshmen are required to take a placement test in English. Those failing this test must register for Remedial English (Eng. 210).

A minimum of twenty quarter hours in English is required for graduation from all departments. All students of all departments must take Eng. 211, Eng. 212, and Eng. 213. Five hours literature are required.

### **ENGLISH MAJORS AND MINORS**

English majors and minors are required to have an average of B in their three Freshman English courses and to pass a comprehensive examination in the field of English at the end of the Fall Quarter of their senior year. Those failing this examination will be required to prepare for a second examination.

A major in English is designed for persons interested in teaching English in the secondary school or in pursuing graduate work in the field. It is also recommended for those intending to follow law, the ministry, writing, or research as a profession.

### **SUGGESTED SEQUENCE OF COURSES IN ENGLISH**

#### **Sophomore Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Introduction to American Literature 220 ..	5 (5-0)	.....	.....
Development of English Literature 222 ..	.....	3 (3-0)	.....
Development of English Literature 223 .....	.....	.....	5 (5-0)
Voice and Speech Improvement 224 .....	.....	3 (2-2)	.....
English Elective .....	.....	.....	3 (3-0)

**Junior Year**

American Literature 221 .....	5 (5-0)	.....	.....
Shakespeare 234 .....	5 (5-0)	.....	.....
Advanced Grammar 237 .....	.....	.....	3 (3-0)
English Elective .....	.....	.....	3 (3-0)

**Senior Year**

Advanced Composition 244 .....	3 (3-0)	.....	.....
Methods of Teaching English, Ed. 243 ...	5 (5-0)	.....	.....
Directed Teaching, Ed. 251 .....	5 (2-6)	.....	.....

**COURSES IN ENGLISH  
LANGUAGE AND COMPOSITION**

**210. Remedial English**

Emphasis upon the elementary requirements in English usage; such as, the rudiments of grammar, punctuation, and spelling. Students who fail to pass the placement test in English are required to complete this course in addition to the regular English requirements. Credit 3(3-0).

**211. Grammar**

A review of the fundamental principles of grammar and the application of these principles in sentences and paragraphs. Any quarter. Credit 5(5-0).

**212. Composition**

Practice in paragraph development, outlining, letter writing, short themes and using the library. This very practical course introduces the student to the kinds of writing he is likely to do anyway. Prerequisite: English 211. Credit 5(5-0).

**213. Composition and Reading**

This course introduces the student to the techniques of research writing. Prerequisite: English 212. Credit 5(5-0).

**231. Journalism**

Theoretical and practical work in recognizing, gathering, and writing news. While primary attention is given to the development of journalistic technique, there is considerable drill on the fundamental principles of composition. Prerequisite: English 213. Credit 3(3-0).

**236. Argumentation and Debating**

A study of the principles of argumentation. The course consists of discussions, lectures, and classroom debates, all of which procedures are preliminary to public debates. Prerequisite: Eng. 213. Credit 3(2-2).

**237. Advanced English Grammar**

A study of English grammar with emphasis on the present status of modern American English. Spring. Credit 3(3-0).

**244. Advanced Composition**

This course is intended to strengthen the techniques of writing developed in English 212 and 213. The student will not only strengthen and polish his written expressions, but he will have opportunity to practice on the more specialized forms of writing that appeal to him. Credit 3 (3-0).

**245. Review for English Majors and Minors**

This course is planned particularly for seniors who desire personal attention in further mastering the fundamentals of English composition and in becoming more conversant with the general field of English and American literature. Winter. Credit 0(2-0).

**SPEECH AND EXPRESSION****224. Voice and Speech Improvement**

A study of the basic attributes of effective delivery. Tests and recordings to discover speech and voice defects. Drills, exercises, and projects to improve general speaking habits. Any quarter. Credit 3 (2-2).

**225. Public Speaking**

A study of the methods by which public speeches are made clear, interesting, and forceful. Practice in writing and delivering speeches according to the occasion. Prerequisite: English 224. Credit 3 (2-2).

**227. Oral Interpretation**

Training in expressive audience reading of selections from classical and modern literature. Credit 3(1-2).

**228. Acting**

A laboratory course designed to develop skill in voice, diction, and pantomime by means of readings, monologues, skits, and short plays for school and community. Political experience in the major A. and T. dramatic productions. Credit 3(1-4).

**229. Parliamentary Procedure**

Theory and practice in the rules and customs governing organization and proceedings of deliberative bodies. Prerequisite: English 213. Credit 1(0-2).

**LITERATURE****220. Introduction to American Literature**

A survey of American literature from colonial times to the present. Prerequisite: Eng. 213. Credit 5(5-0).

**221. American Literature**

A study of major American writers since 1850. Prerequisite: English 213. Credit 5(5-0).

**222. Development of English Literature**

Reading in English Literature from the beginnings to 1700. Study of the growth of ideas and institutions, of the types of literature, and of the great personalities who have contributed most to the literature. Lectures. Reports. Credit 3(3-0).

**223. Development of English Literature**

English Literature from 1700 to the twentieth century. Lectures. Reports. Prerequisite: Eng. 213. Credit 5(5-0).

**226. Dramatic Literature**

A survey of dramatic literature. Origin of the drama, readings in Greek, classical French, Elizabethan, and contemporary drama. Credit 3(3-0).

**234. Shakespeare**

A detailed, chronological study of the principal plays taken from all four of the periods of dramatic production. Lectures, reports, one long paper. Prerequisite: 20 hours of English. Credit 5(5-0).

**242. The Romantic Era**

The principles and ideas of Romanticism as expressed in the works of the principal English writers of poetry and prose from 1798 to 1823. Term report. Credit 3(3-0).

**243. The Victorian Era**

Readings in the works of the principal English writers of the Victorian Age. Term report. Credit 3(3-0).

**246. The Novel in English**

The growth and development of the novel in English from the eighteenth century to the present time. Credit 3(3-0).

## DEPARTMENT OF FOREIGN LANGUAGES

The department aims to develop reasonable facility in the reading, speaking, and writing of the principal modern foreign languages. It endeavors, furthermore, to lead students to an intelligent appreciation of outstanding literary masterpieces, to develop a better knowledge of continental contributions to modern culture, and to create a spirit of understanding that will result in proper attitudes toward different national groups.

Elementary French courses 211, 212, 213 are recommended for those students who have no previous knowledge of French, or who present one unit of high school credit. For those students presenting two units of high school credit, Intermediate French courses 214 and 215 are required. However, if students with two units of high school French should take Elementary French, they are required to complete 15 hours on the same level.

The following courses are suggested as majors and minors and are recommended for those interested in graduate study, research, government service, or commerce.

For Freshmen and Sophomore Courses, see page 61.

### MAJOR IN FOREIGN LANGUAGES

#### Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
French 214, 215, 216 .....	5(5-0)	5(5-0)	5(5-0)
French 217, 218, 219 .....	3(3-0)	5(5-0)	5(5-0)
Spanish 211, 212, 213 .....	5(5-0)	5(5-0)	5(5-0)
Minor or Electives .....	5(5-0)	3(3-0)	3(3-0)

#### Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
French 221, 222, 223 .....	5(5-0)	5(5-0)	5(5-0)
French 231, 245, 247 .....	5(5-0)	5(5-0)	5(5-0)
Spanish 214, 215, 216 .....	5(5-0)	5(5-0)	5(5-0)
Minor or Electives .....	3(3-0)	3(3-0)	3(3-0)

### COURSES IN FRENCH

#### 211. Elementary French

Special attention is given to gaining a complete knowledge of the essentials of grammar and pronunciation, to the acquisition of a vocabulary, and to elementary composition. Fall. Credit 5(5-0).

#### 212. Elementary French

This course continues the work in grammar and pronunciation. Conversation and dictation are encouraged. Winter. Credit 5(5-0).

**213. Elementary French**

Practice in oral and written composition is continued. The early acquisition of taste for advanced French is stimulated through the reading, translation, and interpretation of easy modern French prose. Spring. Credit 5 (5-0).

**214. Intermediate French**

This course is open to students who have completed two units of high school French or college French 211, 212, 213. A brief review of grammar is followed by practice in pronunciation. Fall. Credit 5 (5-0).

**215. Intermediate French**

The reading of French plays is encouraged, and the ability to write and converse in French is further developed. Winter. Credit 5 (5-0).

**216. Phonetics**

This course is intended for students majoring and minoring in French. It is also recommended for those who wish to improve their pronunciation of the language. Spring. Credit 5 (5-0).

**217. French Literature of the Middle Ages and the Renaissance**

A general introduction to the more advanced study of French literature. Its purpose is to give a clear idea of the great periods and the main tendencies in the history of French thought and letters from the Middle Ages to the Seventeenth Century. Fall. Credit 5 (5-0).

**218. Advanced French Composition**

An advanced course in oral and written self-expression in French. Special attention is given to vocabulary building, free composition, and conversation, prepared and improvised, covering the many phases of everyday activities. Spring. Credit 5 (5-0).

**219. Advanced French Conversation**

A course for students having some experience in written French. It aims to improve oral and aural conversation. Working groups will be arranged for practice in French conversation. Spring. Credit 5 (5-0).

**220. Advanced French Grammar and Reading**

The object of this course is to give the student practical training in the use of advanced French grammar and reading. It is conducted largely in French. Spring. Credit 5 (5-0).

**221. French Literature in the Seventeenth Century**

This course presents Classicism through the masterpieces of Corneille, Racine, Moliere and other authors of the "Golden Period" in French letters. Conducted in French. Fall. Credit 5 (5-0).

**222. French Literature of the Eighteenth Century**

The object of this course is to study in particular the life and works of Montesquieu, Voltaire, Rousseau, and the Encyclopedists. Conducted in French. Winter. Credit 5(5-0).

**223. French Literature of the Nineteenth Century**

The object of this course is to study the great literary currents of the nineteenth century, romanticism and realism. Spring. Credit 5(5-0).

**231. Modern Contemporary French Literature (Formerly 243)**

This course deals with the chief writers and literary currents of the time. Lectures and outside readings. Credit 3(3-0).

**233. Intermediate Conversational French**

The chief aim of this course is to give students intensive training in self-expression and to improve their pronunciation and diction in reading and speaking. Class is conducted in French. Winter. Credit 3(3-0).

**234. Advanced Conversational French**

Intensive oral and written work, consisting of discussions and compositions in French. Assigned outside readings on newspaper articles, literature, civilization, etc. encouraged. Spring. Credit 3(3-0).

**245. French Civilization**

A general survey of the history of France, with emphasis on the social, political and economic development designed to give the student an understanding of present conditions and events. A detailed study is made of such French institutions as art, music and education. This course is also offered in conjunction with reports on collateral readings. Credit 5(5-0).

**246. French Seminar. Thesis Problem**

Open only to seniors majoring in Foreign Languages. Credit 3(3-0).

**247. French for Prospective Teachers**

This course is elective for seniors with the consent of the instructor. A brief review of the principles of grammar is followed by an intensive drill in phonetics. Aims, problems, methods, and texts are discussed. Spring. Credit 3(3-0).

**COURSES IN SPANISH****211. Elementary Spanish**

The primary object of this course is to secure the understanding of easy Spanish, written and spoken. Much attention is given to the essentials of grammar and pronunciation. Fall. Credit 5(5-0).

**212. Elementary Spanish**

This course continues the work in grammar and pronunciation. Prose reading is encouraged by exercises in vocabulary building. Winter. Credit 5(5-0).

**213. Elementary Spanish**

Attention is given to advanced elementary grammar. Prose reading continues and a taste for advanced Spanish is stimulated through the reading of poetry. Credit 5(5-0).

**214. Intermediate Spanish**

This course is open to students who have completed two units of high school Spanish or college Spanish 211, 212, 213. Thorough review of Spanish syntax with emphasis on its essential difficulties. Fall. Credit 5(5-0).

**215. Intermediate Spanish**

Practice in writing idiomatic Spanish in translations and free compositions. Readings from modern authors. Winter. Credit 5(5-0).

**216. Survey of Spanish Literature**

A survey of the most important movement, writers, and works from the Middle Ages up to the present time. Spring. Credit 5(5-0).

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**DEPARTMENT OF HOME ECONOMICS**

The Department of Home Economics offers courses designed for curricula leading to the Bachelor of Science degree in the following subject matter areas: (1) Clothing, (2) Home Economics Education, (3) Institutional Management, and (4) Nursery School Education. Two-year terminal programs leading to a certificate are offered in (1) Dressmaking, and (2) Cafeteria Management.

The several curricula have been offered to meet the needs of students who plan to train for professional employment as teachers in public schools, nursery school teachers, home demonstration agents, hospital dietitians, dressmakers and cafeteria workers.

Students who plan to take courses in home economics leading to the degree of Bachelor of Science should follow the Basic Curriculum in Home Economics for the Freshman and Sophomore years (see page 58). The Head of the Home Economics Department and faculty will assist the student on planning her program for the junior and senior years.

Special programs will be arranged to meet the needs of students who wish to follow the two-year programs in dressmaking, and cafeteria management.

**CHILD DEVELOPMENT AND FAMILY RELATIONSHIP****111. Personal and Group Living**

This course is concerned with aiding in the solution of the immediate problems of personal and group living as the freshmen girls find them at college. Credit 2(2-0).

**113. Family Relationships**

Designed to help the student adjust to family and group living. Credit 3(3-0).

**121. Health and Home Nursing**

Problems relating to family and community health are discussed. Laboratory experiences are given on how to care for the sick in the home with special emphasis on the construction and use of improvised equipment. Credit 4(3-2).

**115. Introduction to Child Development**

Survey of the needs of children and how these needs are being met by the home, school and community. Credit 3(3-0).

**122. Personal and Family Finance**

Specific study of family income and expenditures with emphasis on budget making. Wage levels as to locality, occupation and social demands are considered. Financial problems of the college student will be discussed. Credit 3(3-0).

**131. Child Development**

A study of the physical, mental, social, emotional, personality, and language development of the child from conception through six years of age. Credit 3(3-0).

**132. Child Development**

A study of the physical, mental, social, emotional and personality development of the child from early childhood through adolescence. Discussions of the problem of this age group. Planning, organizing and supervising playgrounds for children of school age. Credit 4(2 hrs. lecture—laboratory hours arranged).

**CLOTHING, TEXTILES AND RELATED ART****110. Clothing Selection**

Selection of clothing for individual differences with emphasis on the elements of design and color. Credit 2(1-2).

**112. Textiles**

Textile fibers, their source, characteristics and production into fabric. The social, economic and hygienic aspects and care of clothing. Credit 3(1-4).

**113. Elementary Clothing Construction**

Fundamental principles of clothing construction based on the use of the commercial pattern. Credit 4(1-6).

**121. Children's Clothing**

The construction of infant's and children's clothes with emphasis upon self-help for children. Appropriate decorations are stressed. Prerequisite: C.T.R.A. 111. Credit 3(1-4).

**127. Interior Decoration**

Arrangement of home furnishings with emphasis on color, line and design. Laboratory experience in construction principles of making slipcovers, draperies and other fabric furnishings. Prerequisite: Art 327. Credit 5(2-4).

**131. Historic Costume and Design**

A study of the history of costume and its adaptation to our modern dress. Credit 3(2-2). Prerequisites: Art 320 and 327.

**132. Fitting and Pattern Study**

Partial drafting of a foundation garment from which an individual flat pattern is made. Initiative and originality are encouraged in designing several different garments from the original flat pattern. Credit 4(1-6).

**133. Dress Design**

Draping and designing in the actual fabric on the form with emphasis on line, form and texture of fabric. Prerequisite: C.T.R.A. 132. Credit 3(1-4). Prerequisites: Art 320 and 317.

**134. Clothing Reclamation**

Problems in altering, repairing, remaking, redyeing, and reclaiming old clothing. Credit 3(1-4).

**135. Millinery**

Copying, designing, blocking, pattern making, draping on the block and on the head of handmade hats using various millinery materials. Credit 3(1-4).

**141. Advanced Clothing**

Techniques in the tailoring of custom-made garments for women and handling of more difficult fabrics. Credit 5(2-6).

**142. Special Problems in Clothing**

Individual work on special problems in clothing. Credit 3-5 hours per quarter. Maximum credit 10 hours.

**FOODS AND NUTRITION****121. Food Selection and Preparation**

Selection, purchase, care of food and the application of principles and fundamental processes of food preparation and preservation to obtain standard products. Credit 5(3-4).

**123. Nutrition**

A study of the essentials of an adequate diet. Consideration will be given to the deficiency conditions caused by inadequate nutrition. Diets will be planned for various age groups with emphasis on low and medium incomes. Credit 4(3-2).

**124. Meal Planning and Service**

Low and moderate cost food plans are made to meet the needs of different family groups with experience in marketing, preparing and serving meals. Credit 5(3-4).

**131. Experimental Cookery**

An analytical study of food products and how better food preparation may be brought about. Credit 4(2-4).

**132. Cafeteria Management**

Problems of organization, supervision and administration of institutional food service centers. Credit 5(3-4).

**133. Quantity Cookery**

Practical experience in the preparation and service of foods for large groups. Credit 3(1-4).

**134. Child Feeding**

Proper foods for children at various ages with practical experience in nursery school. Credit 3(2-2).

**142. Diet and Disease**

Treatment of diseases through diet therapy. Credit 3(3-0).

**145. Cafeteria Management Apprenticeship.** Credit 2-6.**HOME ADMINISTRATION****112. Home Management**

Managing and caring for the home including the utilization of family resources. Credit 3(3-0).

**123. Consumer Problems**

Problems of consumption, merchandizing practice, legislation relating to consumer goods and organizations interested in the solution of consumer problems. Credit 3(3-0).

**134. Housing**

A course designed to help the student to interpret architectural plans for homes suitable for the low and moderate income family groups. Practical problems in the adaptation of rooms for more adequate use by the family. Credit 3(2-2).

**142. Household Equipment**

Selection, operation and care of household equipment. Credit 3(2-2).

**143. Home Management Residence**

Application of managerial principles and performance of household skills as they relate to personal, group and family living. Credit 5 hours.

**HOME ECONOMICS EDUCATION****152. Methods of Teaching Home Economics**

A course designed to acquaint the student with home and family life education in the elementary and secondary schools. Emphasis is placed on the development of a personal philosophy of home economics and the application of educational principles to the teaching of home-making courses. Credit 5(5-0).

**153. Observation and Directed Teaching**

Experience in conducting classes in off-campus teaching centers. A minimum of 30 hours of observation and 60 hours of teaching is required. Credit 5 quarter hours.

**Advanced Undergraduates or Graduates****501. Special Problems in Home Economics Education**

Individualized work on special problems in home economics education. Credit 3 hours.

**NURSERY SCHOOL EDUCATION****131. Play and Play Material for the Preschool Child**

Discussion of the importance of play in all aspects of child development. The evolution of play equipment. Opportunity for the students to gain experience and explore the possibilities of all the various creative materials used by children. Credit 2(0-4).

**132. Literature for the Young Child**

A survey of prose and poetry for young children. Criteria will be developed for the selection and age placement of stories. Consideration will be given to the technique and art of telling stories to informal groups, as well as, giving an opportunity for telling and writing stories for young children. Credit 3(1-4).

**133. Preschool Music**

Acquisition of an initial repertoire of children's tunes. Listening to songs and records for the preschool child. Criteria for selecting songs, rhythms and cooperation will be discussed. Credit 3 (2-2).

**141. Kindergarten and Preschool Methods**

Methods and materials daily and long-range curriculum development to meet the needs of 2 to 5 year olds. Observation, discussion of reports, individual development, plant equipment, teacher-child relations and planning, P.T.A. meetings will be included. Credit 5 (5-0).

**142. Directed Teaching in the Nursery School**

Practice teaching in the Nursery School. Conference for individual problems. Credit 5 hours.

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**DEPARTMENT OF INDUSTRIAL EDUCATION**

The public schools of North Carolina, like the public schools of many states, are in constant need of securing qualified teachers of industrial education. To meet the needs, A. and T. College offers training for industrial arts teachers and trade teachers of vocational industrial subjects.

**DEPARTMENT OBJECTIVES**

The courses offered by the Department of Industrial Education are designed to serve the following purposes:

1. To prepare teachers of industrial arts and vocational industrial courses for public school service and to offer additional training to industrial teachers now in service.
2. To develop the students skill and manipulative ability in industrial processes.
3. To develop correct habits, attitudes and ideals for health and safety.
4. Supply student with the necessary informational background for shop teaching.
5. Give experience in typical teaching activities and practice in teaching industrial courses.
6. Familiarize students with aims, problems and literature relating to industrial education.
7. Develop an appreciation of the significance of industrial education in our society.
8. Stimulate a scholarly and scientific attitude toward problems of teaching.

## TEACHER TRAINING FOR INDUSTRIAL ARTS EDUCATION

The prospective teacher of industrial arts education receives training in the fundamental skills of several trades. The fields of concentration are automobile mechanics, carpentry, ceramics, electricity, machine shop, masonry, mechanical drawing, radio servicing, welding and woodwork.

## CURRICULUM FOR INDUSTRIAL ARTS EDUCATION

### Freshman Year

(See First Year's Curricula of Engineering, Page 67)

### Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Woodwork, I.A. 321, 322, 323 .....	5(0-10)	5(0-10)	5(0-10)
Industrial Arts Drawing, I.A. 331, 332, 333 .....	3(0-6)	3(0-6)	3(0-6)
Electricity, I.A. 326, 327, 328 .....	3(0-6)	3(0-6)	3(0-6)
Military or Air Science 221, 222, 223 .....	2(2-2)	2(2-2)	2(2-2)
Physical Education Electives .....	1(0-2)	1(0-2)	.....
Voice & Speech Improvement, Eng 224 .....	.....	.....	3(2-2)
Music Elective .....	2(2-0)	.....	.....
Adolescent Psychology, Ed. 223 .....	.....	3(3-0)	.....
Educational Psychology, Ed. 231 .....	.....	.....	3(3-0)
Materials of Construction, I. A. 324 .....	3(3-0)	.....	.....
Vocational Education, Ed. 331 .....	.....	3(3-0)	.....
	19 hrs.	20 hrs.	19 hrs.

### Junior Year

#### Woodturning, Upholstery, Finishing

I. A. 338, 339, 340 .....	3(0-6)	3(0-6)	3(0-6)
Machine Shop, M. E. 328, 329, 330 .....	2(0-4)	2(0-4)	2(0-4)
**Technical Electives .....	3(0-6)	3(0-6)	3(0-6)
Physics 321, 322 .....	5(3-4)	5(3-4)	.....
Principles of Sociology, Soc. 231 .....	.....	.....	5(5-0)
Physical Education Electives .....	1(0-2)	1(0-2)	.....
Measurement and Evaluation, Ed. 236 .....	.....	.....	3(3-0)
Vocational Guidance, Ed. 332 .....	3(3-0)	.....	.....
Shop Management, I. A. 347 .....	.....	3(3-0)	.....
*Electives .....	3 hrs.	3 hrs.	4 hrs.
	20 hrs.	20 hrs.	20 hrs.

**Senior Year**

Welding 311 .....	.....	3 (0-6)	.....
Art 311, 312 .....	3 (0-6)	3 (0-6)	.....
Economics 231, 234 .....	5 (5-0)	5 (5-0)	.....
Personal and Community Hygiene,			
Phys. Ed. 234 .....	5 (5-0)	.....	.....
Principles of Secondary Ed., Ed. 237 .....	.....	3 (3-0)	.....
Trade Analysis, Ed. 341 .....	3 (3-0)	.....	.....
Methods of Teaching Ind. Ed., Ed. 343 .....	.....	.....	5 (5-0)
Observation & Practice Teaching, Ed. 344 ..	.....	.....	5 (5-0)
Current Problems in Ind. Ed., Ed. 502 .....	.....	3 (3-0)	.....
*Electives .....	3 hrs.	3 hrs.	3 hrs.
	_____	_____	_____
	19 hrs.	20 hrs.	13 hrs.

\*\*Technical Electives—9 hours required in one area:

- Carpentry 312, 313, 314
- Auto Mechanics 311, 312, 313
- Masonry 311, 312, 313
- Radio 311, 312, 313
- Art 337, 338, 339

\*Junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with the student's adviser.

**Suggested Electives**

- I.A. 329, 330, 338a, 339a, 340a, 348, 506
- M. E. 317, 323, 327
- Com. Ed. 317, 318, 339
- Ed. 213, 222, 224, 225
- Weld. 312, 313
- Phy. Ed. 238

**COURSES IN INDUSTRIAL ARTS****321. General Woodwork**

Care and use of hand tools, principles of planning, squaring and laying out work. Special projects assigned to students in accordance with the student's background with the use of hand tools only. Credit 5 (0-10).

**322. General Woodwork**

Emphasis is placed on the practical operation of such machines as variety saw, band saw, radial saw, planer, mortiser, shaper, tenon machine, belt and drum sanding machines. Credit 5 (0-10). Prerequisite: I. A. 321.

**323. Advanced Woodwork**

Construction of projects from drawings or blueprints. Also care of power machines, saw filing, band saw brazing, sharpening and setting planer knives are part of the course. Prerequisite: I. A. Ed. 322. Credit 5 (0-10).

**324. Materials of Construction**

A study of the manufacture and physical properties of iron, steel, timber, cement, concrete, and other materials encountered in technical fields, and the A. S. T. M., specifications and methods of testing. Prerequisite: Chem. 113. Credit 3 (3-0).

**326. Electric Wiring**

This course covers the fundamental principles of two- and three-wire circuits for light and power. It also considers the study of and use of electrical wiring materials and electrical codes. Credit 3 (0-6).

**327. General Electricity**

Instruction and laboratory practice covering fundamental principles of direct and of alternating current equipment. Study of meters, motors, generators, armature winding and alternating current circuits. Study of home appliances are made an integral part of the course. Credit 3 (0-6).

**328. Electricity (Radio)**

Theory and fundamentals of radio communication circuits, and power supplies. Standard circuits are set up and tested in the laboratory. Part of the class period will be devoted to radio repair and code practice. Prerequisites I. A. 326, 327. Credit 3 (0-6).

**329. Woodcrafts**

A basic course in the fundamentals of woodcraft. Designed especially for teachers of arts and crafts, elementary teachers, leaders of scoutcraft, playgrounds, recreational centers, community centers, and for those who want merely the enjoyment which comes from working with wood. Study of fundamental operations, tools and materials, identification of woods, and construction of one or more small projects. Credit 3 (0-6).

**330. Repair and Maintenance of Home Furniture**

A course designed for homemaking teachers to help them meet specific problems in the improvement and care of home furniture. Instruction will be given on simple upholstery techniques and other processes

using tools and accessories for home repair. Opportunities will be provided for experience in finishing and refinishing wood. Students should make an effort to provide their own work project. Credit 3(0-6).

### **331. Industrial Arts Drawing**

It is expected that the student shall acquire information and develop skills needed by a teacher in industrial arts drafting. Modern techniques are utilized and explained in light of teaching drawing at various levels in high school or vocational school. Instruction in A.S.A. conventions, projections, revolutions, developments, lettering and pictorial representation with reference to machine and woodworking drawing. Prerequisite: M. E. 311, 312. Credit 3(0-6).

### **332. Industrial Arts Drawing**

Problems in sheetmetal drawing, shading, technical sketching, production illustration and industrial arts design. Prerequisite I.A. 331. Credit 3(0-6).

### **333. Industrial Arts Drawing**

Basic elements in the planning and construction of residential buildings. Problems in floor plans, elevations, details and perspective. Study of kitchen, living rooms, dining room, bath room and bed room layout. Prerequisite: I.A. 332. Credit 3(0-6).

### **338. Wood-turning**

Thorough drill in the cutting action of turning tools and methods of holding them. Projects in spindle and in face plate turning are selected for practice. Instruction is also given in finishing and polishing on the lathe. Credit 3(0-6).

### **338a. Wood-turning**

Instruction is given in elaborate and more intricate types of turning than are given in I. A. 388. Projects involving spherical and spiral turning are included. Credit 3(0-6).

### **339. Upholstery**

Instruction includes caning and seat weaving method of upholstering a plain board surface, methods of fastening webbing, burlap and its uses, upholstery with springs, hard-edge upholstery, and spring edge upholstery. Credit 3(0-6).

### **339a. Upholstery**

A continuation of 339, including construction or rebuilding of an upholstered project. Credit 3(0-6).

### **340. Wood Finishing**

Instruction is given in the mechanical preparation of wood before staining, the preparation and use of stains and the application of dif-

ferent classes of commercial stains, kinds of fillers—their preparation and application, surface or refinishing coats, such as wax, oil, shellac, varnish, paint, and enamel. Credit 3(0-6).

### **340a. Wood Finishing**

Refinishing, French polishing, and special work in finishing and polishing on the lathe. Credit 3(0-6).

### **341. Foundations of Industrial Education**

A foundation and orientation course in industrial education. Familiarizes the student with the underlying philosophy, the basic principles, the prevailing practices and the accepted terminology in trade and industrial educations. Credit 3(3-0).

### **347. Materials, Equipment and Shop Management**

The problems of equipping and arranging trades and industrial art shops and the care of tools and materials, safety and management are discussed. Credit 3(3-0).

### **348. Comprehensive Shop Projects**

The student will be required to engage in such practical work as his individual needs seem to warrant. This work may include general construction and/or repairs, maintenance work or advanced project involving wood turning, carving, inlaying, upholstering, and wood finishing. Credit 3(0-6).

## **COURSES IN INDUSTRIAL EDUCATION**

### **331. Vocational Education**

A foundation and orientation course in vocational education. Familiarize the student with a brief historical background of concepts and developments in vocational education. Emphasis is placed upon the need of vocational education in democracy. Special consideration is given to the study of the evolution of the underlying philosophy and basic principles of vocational education, as a phase of the general education program. Credit 3(3-0).

### **332. Vocational Guidance (Formerly 341)**

The problem of vocational guidance, its beginning, organization and administration in high schools. Special attention will be given to guidance in the Junior and Senior high school as it relates to the work of Industrial Arts. Fall. Credit 3(3-0).

### **341. Trade Analysis (Formerly 332)**

This course gives the students a knowledge of organizing trades and industrial arts courses. Emphasis is put on the selection of a line of useful and practical projects and the grouping of these projects in the order of their learning difficulties. Spring. Credit 3(3-0).

**343. Methods of Teaching Industrial Education**

Fundamental factors in teaching, agencies of education, classroom management, selection of problems and projects, job sheets and lesson plans. Winter. Credit 5(5-0).

**344. Observation and Practice Teaching in Industrial Education**

Practical experience in conducting unit trade and industrial arts programs will be offered. Spring. Credit 5(5-0).

**VOCATIONAL INDUSTRIAL EDUCATION\***

This curriculum is designed for the preparation of shop and related subject teachers in secondary school programs in vocational trades and industries.

The Vocational Industrial Education curriculum leads to the degree of Bachelor of Science in Vocational Industrial Education. The student will also meet certification requirements for Industrial Arts.

\*To be certified by the state department as a vocational shop and trade practice teacher, a person must present evidence of two years trade experience beyond the apprenticeship period in the trade he expects to teach.

Students desiring this degree may enter with or without practical trade experience. If he does not have the necessary trade experience when he enters he may work part of the school year or complete the work experience after completing the required residence courses.

**CURRICULUM FOR VOCATIONAL INDUSTRIAL EDUCATION**

(See Vocational Industrial Courses)

**Freshman Year**

(See First Year's Curricula of Engineering, Page 67)

**Sophomore Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Vocational Shop Projects, V. I. Ed. 321 .. 5(2-10)	.....	.....	.....
Advanced Voc. Projects. V. I. Ed. 322 ....	.....	5(2-10)	.....
Shop Maintenance, V. I. Ed. 323 .....	.....	.....	5(2-10)
Physics 321, 322 .....	5(3-4)	5(3-4)	.....
†Technical Electives .....	5(0-10)	5(0-10)	3(0-10)
Materials of Construction, I. A. 324 .....	3(3-0)	.....	.....
Vocational Education, Ed. 331 .....	.....	3(3-0)	.....
Physical Education Elective .....	.....	.....	1(0-2)
Military or Air Science 221, 222, 223 ....	2(2-2)	2(2-2)	2(2-2)
Principles of Sociology, Soc. 231 .....	.....	.....	5(5-0)
Shop Management, I. A. 347 ....	.....	.....	3(3-0)
	.....	.....	.....
	20 hrs.	20 hrs.	19 hrs.

**Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Industrial Lab., V. I. Ed. 331, 332, 333 . . . . .	5 (2-10)	5 (2-10)	5 (2-10)
‡Technical Electives . . . . .	3 (0-6)	3 (0-6)	3 (0-6)
Art 311, 312, 313 . . . . .	3 (0-6)	3 (0-6)	3 (0-6)
Vocational Guidance, Ed. 332 . . . . .	.....	3 (3-0)	.....
Voice & Speech Improvement, Eng. 224 . . . . .	3 (3-0)	.....	.....
Adolescent Psychology, Ed. 223 . . . . .	3 (3-0)	.....	.....
Educational Psychology, Ed. 231 . . . . .	.....	3 (3-0)	.....
Measurement & Evaluation, Ed. 236 . . . . .	.....	.....	3 (3-0)
Physical Education . . . . .	.....	.....	1 (0-2)
**Electives . . . . .	3 hrs.	3 hrs.	4 hrs.
	_____	_____	_____
	20 hrs.	20 hrs.	19 hrs.

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
‡Technical Electives . . . . .	3 (0-6)	3 (0-6)	.....
Trade Analysis, Ed. 341 . . . . .	3 (3-0)	.....	.....
Current Problems in Ind. Ed., Ed. 502 . . . . .	.....	3 (3-0)	.....
Methods of Teaching Ind. Ed., Ed. 343 . . . . .	.....	.....	5 (5-0)
Observation & Practice Teaching, Ed. 344 . . . . .	.....	.....	5 (5-0)
Principles of Secondary Ed., Ed. 237 . . . . .	.....	3 (3-0)	.....
Economics, 231, 234 . . . . .	5 (5-0)	5 (5-0)	.....
Physical Education 234 . . . . .	5 (5-0)	.....	.....
Physical Education Electives . . . . .	1 (0-2)	1 (0-2)	.....
**Electives . . . . .	3 hrs.	4 hrs.	3 hrs.
	_____	_____	_____
	20 hrs.	19 hrs.	13 hrs.

**Suggested Electives**

I.A. 331, 332, 333 Ed. 213, 222, 224, 225	M. E. 323, 327 C. E. 317, 318, 319 B.A. 321, 339	V. I. 340, 341, 342 Phy. Ed. 238
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†Technical Electives will be in consultation with adviser to meet state certification requirements for Industrial Arts. Minimum of nine credit hours are required in each of the following areas, wood, metal, electricity, drawing and nine credits in other elective areas. Technical Electives may include I.A. 326, 327, 328, 321, 322; M.E. 328, 329, 330; Weld. 311, 312; Radio 311, 312, 313; Carpentry 311, 312, 313; Cabinet Making 311, 312, 313.

\*\*The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with the student's adviser.

## VOCATIONAL INDUSTRIAL COURSES

Vocational Industrial courses may be taken in Automobile Mechanics, Carpentry, Cabinet Making and Upholstery, Masonry, Plumbing and Steamfitting, Shoe Repair, Tailoring, Machine Shop, Radio and Television, Electric Wiring or Welding. All Vocational Industrial Courses are to be taken in one shop area.

Courses will be listed with major shop, i.e. Radio V. I. 321, Carp. V. I. 331, Weld. V. I. 332.

### **321. Vocational Shop Projects**

Work in this course is based on individual projects adapted to the student's needs and experience. Projects selected must contain approved factors of educational significance and technical accuracy and be of a type not previously covered by the individual. Credit 5(2-10).

### **322. Advanced Vocational Projects**

A continuation of V. I. Ed. 321 intended to increase skills in the students major field of interest. Emphasis on selection and construction of typical vocational shop projects. Credit 5(2-10).

### **323. Vocational Shop Maintenance**

Course designed to cover study of installation, adjustments, and care of all equipment and supplies in the school and job shop. Shop and classroom equipment are planned, designed and constructed as individual or group projects. Existing shop layouts surveyed and evaluated. Operating and safety information prepared and distributed. Credit 5(2-10).

### **331. Industrial Laboratory (Advanced Shop Techniques)**

Study and practice of administrative procedures used in school shops. Professional problems, personnel organization and management, plus forms, requisitions, orders, invoices, stock bills, inventories, buying and selection of equipment and supplies, dispensing and checking of shop tools and equipment, cost studies. Credit 5(2-10).

### **332. Industrial Laboratory (Advanced Shop Techniques)**

Experience in the selection organization and presentation of instructional units for vocational classes in the student's major field of interest. A survey is made with the view to organizing materials for teaching. With the survey a study is made of the history and development, sources of raw materials, methods of production and material use, labor conditions, government legislation and economic significance. Shop tests are developed and administered. Drawings and other teaching materials prepared and reproduced. 5(2-10).

### **333. Industrial Laboratory (Advanced Shop Techniques)**

Practical work related to the major shop area. The student will be expected to contract jobs, make out work orders, estimates, cost sheets and deliver the completed job to the customer. All work will be under the supervision of the instructor. Credit 5(2-10).

**341. Advanced Shop Practice**

The student will engage in such practical work as his individual needs seem to warrant. This work may include advanced construction, repair or maintenance work. Credit 3(0-6).

**342. Advanced Shop Practice**

Continuation of V. I. Ed. 340. Credit 3(0-6).

**343. Advanced Shop Practice**

Continuation of V. E. Ed. 341. Credit 3(0-6).

**GRADUATE PROGRAM IN INDUSTRIAL EDUCATION**

Graduate work in industrial education aims to aid the promotion of industry by providing advanced technical training for those who plan to follow industrial careers and for teachers of industrial arts education or vocational industrial education. The department offers instruction for the following types of students: (1) those in the field who desire advanced training as teachers or supervisors of unit and general industrial arts shops in junior and senior high schools; and in schools of the smaller communities; (2) experienced tradesmen with the necessary teaching requirements who desire additional training in the development and conduct of programs of industrial education, especially those established under the Smith-Hughes Act; (3) teachers of related or cognate subjects; (4) others who desire further training in these fields.

**A. For Teaching certificates**

1. Required courses
  - Ed. 601 History of American Public Education .. Credit 3(3-0)
  - Ed. 605 Teaching Principles ..... Credit 3(3-0)
  - Ed. 606 The Curriculum ..... Credit 3(3-0)
  - Ed. 621 Educational Psychology ..... Credit 3(3-0)
2. Subject-matter courses according to certificate.... 18 Q. H.
3. Electives and Thesis ..... 15 Q. H.

**SUBJECT MATTER COURSES IN INDUSTRIAL EDUCATION**

Ind. Ed. 506. Plastic Craft

Ind. Ed. 608, 609, 610. Comprehensive Shop Problems.

Ind. Ed. 611, 612, 613. Problems in Industrial Arts

Ind. Ed. 624. Laboratory Planning for Industrial Shops

NOTE: For general requirements for the Master of Science degree, see page 70.

**COURSES IN INDUSTRIAL EDUCATION****Graduates and Advanced Undergraduates****502. Current Problems in Industrial Education**

Problems involving the analysis of objective, curriculum content, types of equipment, and outcomes studied. Suggestions are considered

for improving current practices. Projects in industrial relations, public relations, records and forms, literature in the area of industrial education, improvement of instruction, teaching aids and devices. Credit 3(3-0).

#### **504. History of Industrial Education**

(Advanced Industrial History). Deals with the industrial evolution of the United States. The roots of the present age of machinery are sought in English backgrounds—in the manor system, the markets and fairs, the rise of towns, the guilds, the development of capital, the introduction of power driven machinery and the establishment of the factory system. Special emphasis upon developments in America and their effect upon vocational education in this country. Credit 3(3-0).

#### **506. Plastic Craft**

For teachers of industrial arts, arts and crafts and those interested in plastics as a hobby. Operations in plastics are analyzed and demonstrated; design, color, kinds and uses of plastics, how plastics are made and sold; vocational information. Projects suitable for class use are constructed. Credit 3(0-6).

#### **603. Industrial Psychology**

Application of principles of psychology to problems as industrial organization, management, production and efficiency. Credit 3(3-0).

#### **604. Supervision and Administration of Industrial Education**

Relation of industrial education to the general curriculum and the administrative responsibilities entailed. Courses of study; relative costs; coordination problems; class and shop organization, and the development of an effective program of supervision. Selection of teachers and their improvement in-service. Of interest to school administrators, teachers of industrial arts, and vocational-industrial subjects. Credit 3(3-0).

#### **605. Curriculum Laboratory in Industrial Education**

Reviews the basic principles of the preparation of instructional materials for actual shop and classroom use. Each student, or group of students, select some significant area of instruction and develops for this area for actual use in a shop or related subject class. Courses of study that function in actual teaching situations are prepared and it is anticipated that each student will be able to take away with him a course of study that actually meets the needs of his community. Throughout the laboratory method is used, supplemented by demonstrations, field trips, visits to industries. Opportunity is afforded to analyze existing courses of study. Credit (3-0).

#### **606. Research Problems in Industrial Education**

Conferences and studies using the several laboratories of the college as a basis for research. Individual or group studies may be selected to meet the needs of the individual or group as suggested by: Pupil study;

Instructional Material; experiment and development of programs with the publication of either a professional bulletin or technical manual as a goal. Credit 3(0-6) to 6(0-12).

#### **608. Comprehensive Shop Problems**

This is a comprehensive course in woodwork dealing with the use of advance shop techniques. Students must plan and construct projects in woodwork, and study related information on the various materials used in the construction of projects. Open only to those students with adequate background in woodwork. Permission to register must be secured from the instructor. Credit 3(0-6).

#### **609. Comprehensive Shop Problems**

This is a comprehensive course in general electricity. Students are taught to plan and construct their own projects in electricity. There are small individual projects such as door bells, buzzers, small motors, hot plates and one and three tube radios. Both theory and practice are emphasized. Credit 3(0-6).

#### **610. Comprehensive Shop Problems**

This is comprehensive course in metal work dealing with advance shop techniques. Students plan and construct metal work, and study related information on the various materials used in the construction of the projects. Open only to those students with adequate background in metal work. Permission to register must be secured from the instructor. Credit 3(0-6).

#### **611. Problems in Industrial Arts**

This is a comprehensive course in general bookbinding. Students are taught to plan and construct projects such as binding a new book, repairing and binding on old books, binding magazines and binding photographs. Credit 3(0-6).

#### **612. Problems in Industrial Arts**

This is a comprehensive course in silk screen printing. Students are taught to plan and construct projects in silk screen printing activities. Students are taught to design and print the following: posters, season greeting cards, get well cards, covers for school papers, covers for school pamphlets and programs, school albums and gold leaf printing. Credit 3(0-6).

#### **613. Problems in Industrial Arts**

This is a general course in which many activities are taught in accordance with the student's need. Projects in woodwork, general bookbinding, silk screen printing and plastics. Credit 3(0-6).

#### **620. Co-operative Training**

This course is designed to give the prospective teachers of vocational education a knowledge of the basic concepts and processes of co-operative work in general, with special attention to diversified occupations. Credit 3(3-0).

**624. Laboratory Planning for Industrial Shops**

Study of the principles involved in the design, selection, location, installation, and care of equipment suitable for high school industrial arts laboratories or vocational industrial departments. Credit 3(3-0).

**631. General Industrial Education Programs**

Development on local, state, and national levels of day industrial schools, evening industrial schools, part-time day and evening schools. Their organization types, courses of study, scope of movement, study of special student groups, fees and charges, buildings and equipment. Credit 3(3-0).

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**DEPARTMENT OF MATHEMATICS**

Objectives of the Department of Mathematics are as follows:

1. To review and strengthen students in the basic fundamentals of mathematics in order that they may be adequately equipped for expressing or interpreting quantitative ideas in this and related areas.
2. To provide an opportunity for all students to increase their sense of utility of the subject matter by emphasizing the application of mathematical processes to problems involving personal and social living.
3. To equip those students whose interests and abilities lead to further study, research and, or technology with an adequate mathematical background.
4. To contribute to the teaching efficiency of prospective secondary school mathematics teachers by insuring mastery of essential subject-matter materials, and the development of a reasonable degree of skill, accuracy and speed in dealing with these materials.

All freshmen are required to take a placement test in mathematics. Those failing this test must register for Mathematics 309.

A minimum of ten (10) hours of mathematics is required for graduation from all schools.

Mathematics majors and minors are required to have an average of "B" or better in their mathematics courses.

Those persons pursuing mathematics as a major should take Mathematics 313 in their freshman year and Physics 323 during their sophomore year.

The following is suggested for those desiring a major and is recommended for those planning to do research work, graduate study or teach.

Requirements for the major (in addition to the three freshman mathematics courses):

Math. 321, 322, 323. Math. 314, 316, 331.

Suggested electives in mathematics may be taken from the following and from any of the advanced mathematics courses.

Math. 315, 318, 324. M. E. 311, 331. Math. 325.

## MATHEMATICS

### Engineering Mathematics

(See First Year's Curricula of Engineering, Page 67)

#### Sophomore Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 321, 322, 323 .....	5 (5-0)	5 (5-0)	5 (5-0)
Mil. Sci. or Air Science .....	2 (2-2)	2 (2-2)	2 (2-2)
French .....	5 (5-0)	5 (5-0)	5 (5-0)
Physics 321, 322, 323 .....	5 (3-4)	5 (3-4)	5 (3-4)
	_____	_____	_____
	17 hrs.	17 hrs.	17 hrs.

#### Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 318, 331, 501 .....	5 (5-0)	5 (5-0)	5 (5-0)
M. E. 331, 332, 333 .....	5 (5-0)	5 (5-0)	5 (5-0)
Physics 332, 351, 352 .....	5 (5-0)	5 (5-0)	5 (5-0)
Electives .....	3 hrs.	3 hrs.	3 hrs.
	_____	_____	_____
	18 hrs.	18 hrs.	18 hrs.

#### Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 504 .....	.....	.....	5 (5-0)
Math. 324 .....	.....	.....	3 (1-4)
Chemistry 141, 142 .....	6 (3-6)	6 (3-6)	.....
Physics 334, 335 .....	5 (1-4)	5 (1-4)	.....
Electives .....	3 hrs.	3 hrs.	3 hrs.
Math. 314, 316 .....	.....	5 (5-0)	5 (5-0)
B. A. 335 .....	5 (5-0)	.....	.....
	_____	_____	_____
	19 hrs.	19 hrs.	16 hrs.

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Note: The junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with the student's adviser.

**COURSES IN MATHEMATICS****309. Remedial Mathematics**

This course is designed to strengthen and review the student in the fundamentals of arithmetic, plane geometry, and algebra. Students who fail to pass the placement test are required to pass this course in addition to the regular mathematics requirements. Credit 3(3-0).

**311. College Algebra**

Review of elementary topics, such as factoring, fractions, simple equations, exponents, and radicals. Other topics studied are quadratics, simultaneous quadratic equations, logarithms, binomial theorem progression, determinants and permutation. Prerequisite: High School Algebra. Credit 5(5-0).

**312. Trigonometry**

Functions of angles and their practical applications to solution of problems, relations of logarithms of numbers and of the trigonometric functions, solutions of the right and oblique triangles by logarithms. Prerequisites: College Algebra and Plane Geometry. Credit 5(5-0).

**313. Analytic Geometry**

A thorough study of cartesian co-ordinates, curves, loci, straight line, circle, polar co-ordinates and conic sections completes the plane analytic geometry. Co-ordinates in space, loci, the plane and the straight line completes the course. Prerequisite: Math. 312. Credit 5(5-0).

**314. History of Mathematics**

The History of Mathematics: This course is designed as an aid in the preparation of teachers of mathematics and includes a survey of the development of mathematics by chronological periods, with biographical references, illustrations of national and racial achievements, and discussions of the evolution of certain important topics of elementary mathematics. Credit 5(5-0).

**315. Mathematics of Business**

A basic course offered primarily for students of Business Administration. A study of elementary principles of mathematics as applied to investments, sinking funds, annuities, insurance, etc. The course is begun with a thorough study of interests—simple and compound. Credit 5(5-0).

**316. Theory of Equations**

Methods of solving cubics quartics and other higher algebraic equations. Methods of approximating roots, systems of equations, elements of determinants. Prerequisite: Math. 313. Credit 5(5-0).

**318. Elementary Mathematical Statistics**

A general course covering the use of graphs, frequency distributions, averages, measures of dispersion, etc., with an introduction to sampling and correlation; a basic course for all fields of application. Prerequisites: Math. 311, 315 and approval of instructor. Credit 5(5-0).

**321. Differential Calculus**

The fundamentals of differential calculus; maxima and minima; rates; curve tracing and application of derivatives, etc. Prerequisite: Math. 313. Credit 5(5-0).

**322. Integral Calculus**

Fundamentals of integral calculus, application of integrals to measurements of arcs, areas, and volumes, etc. Prerequisite: Math. 321. Credit 5(5-0).

**323. Differential and Integral Calculus**

A continuation of integral calculus. Solution of equations, application of integrals, center of gravity, moments of inertia, double and triple integration. Prerequisite: Math. 322. Credit 5(5-0).

**324. Surveying**

The methods of using the compass, transit, tape and level in making plane surveys. Lectures and field work. Elementary stadia work. Prerequisite: Math. 312. Credit 3(1-4).

This course will not serve as a prerequisite for any other courses in mathematics. Prerequisite: Math. 312. Credit 5(5-0).

**326. Mechanics (Same as M. E. 331)**

Prerequisite: Math. 321. Credit 5(5-0).

**331. Differential Equations**

Solution of standard types of differential equations. Emphasis given on application to numerous examples in electricity and mechanics. Prerequisite: Math. 323. Credit 5(5-0).

**Advanced Undergraduates and Graduates****501. Vector Analysis**

A study of the processes of vector analysis, with a treatment of the vector functions and operations as applied in theoretical work. Prerequisite: Math. 323. Credit 5(5-0).

**502. Mathematics of Life Insurance**

Probability, mortality tables, life insurance, annuities, endowments, computation of net premiums, evaluation of policies, construction and use of tables. Credit 3(3-0).

**503. Integrated Mathematics**

A study of the logical development of the number system, including the complex numbers, the theory of algebra, trigonometry, analytic geometry, differentiation, integration and the regular solids, hyperbolic functions and the theory of constructions with straight edge and compasses. The course provides a mathematical background for mathematics teachers in the senior high school, junior college and technical school. It also shows how trigonometry, algebra, analytic geometry and elementary calculus can be integrated into a unified course. Prerequisite: Calculus 322. Credit 3(3-0).

**504. Numerical Computation**

Interpolation, numerical solution of equations, approximations, numerical integration, construction of tables. Credit 3(3-0).

**506. Advanced Calculus**

Review of differentiation and integration, approximation of integrals, partial derivatives, line integrals, integral theorems, applications to geometry, physics and mechanics. Credit 5(5-0).

**507. Mathematical Statistics**

Averages, moments, correlation, probability, the normal and Poisson's distribution, the Gram-Charlier series, the distribution of statistics, sampling of populations, the Lewis theory, Sheppard's corrections, maximum likelihood, and other selected topics. Credit 3(3-0).

**603. Differential Equations**

Formulation of practical problems as solutions of differential equations, method of solving type forms, systems of equations, singular solutions, methods of approximation, an introduction to partial differential equation. Credit 5(5-0).

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**DEPARTMENT OF MECHANICAL ENGINEERING**

This curriculum offers a broad training in the scientific principles in the field of mechanical engineering and correlates this training with applications to the specific areas of machine design, heat power, heating and ventilation, refrigeration, thermodynamics, industrial management, and manufacturing problems.

Lectures and class instruction are supplemented by laboratory investigations designed to emphasize the engineering and economic principles involved. Students admitted without credit in solid geometry will be required to take it during the freshman year without credit.

**CURRICULUM****Freshman Year**

(See First Year's Curricula of Engineering, Page 67)

**Sophomore Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 321, 322, 323 .....	5(3-4)	5(3-4)	5(3-4)
Mathematics 321, 322, 323 .....	5(5-0)	5(5-0)	5(5-0)
Military Science 221, 222, 223 or			
Air Science 221, 222, 223 .....	2(2-2)	2(2-2)	2(2-2)
Machine Shop Practice, M. E. 328, 329, 330.	2(0-4)	2(0-4)	2(0-4)
Mechanical Drawing 323 .....	3(0-6)	.....	.....

Mechanism, M. E. 321 .....	.....	.....	3 (2-2)
Pattern Making, M. E. 317 .....	3 (0-6)	.....	.....
Economics 231 .....	.....	5 (5-0)	.....
Surveying, Math. 324 .....	.....	.....	3 (1-4)
	20	19	20

**Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Electrical Engineering 321, 322, 323 .....	5 (3-4)	5 (3-4)	5 (3-4)
Mechanics, M. E. 331, 332, 333 .....	5 (5-0)	5 (5-0)	5 (5-0)
Heat Power Engineering, M. E. 336 .....	.....	5 (5-0)	.....
Heating and Ventilating, M. E. 334, 335 ....	3 (3-0)	3 (3-0)	.....
Thermodynamics, M. E. 326 .....	5 (5-0)	.....	.....
Economics 234 .....	.....	.....	5 (5-0)
Electives .....	3 hrs.	3 hrs.	3 hrs.
	21	21	18

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Machine Design, M. E. 341, 342, 343 .....	5 (5-0)	5 (3-4)	5 (3-4)
Heat Power Engineering, M. E. 344, 345 ...	5 (4-2)	5 (3-4)	.....
Hydraulics, M. E. 337 .....	.....	.....	3 (3-0)
Materials of Construction, I. A. 324 .....	3 (3-0)	.....	.....
Contracts and Specifications, M. E. 327....	.....	.....	3 (3-0)
Internal Combustion Engines, M. E. 338 ...	.....	5 (5-0)	.....
Mech. Eng'r'g Laboratory, M. E. 351, 352..	.....	2 (0-6)	2 (0-6)
Testing Materials Laboratory, M. E. 346 ..	2 (0-4)	.....	.....
Metallurgy, M. E. 339 .....	.....	.....	3 (3-0)
Electives .....	3 hrs.	3 hrs.	3 hrs.
	18	20	19

**Suggested Electives**

- Commercial Law, B. A. 335
- Differential Equations, Math. 331
- Economics, Ec. 232
- Structures, A. E. 334
- Hydraulic Machinery, M. E. 347

\*NOTE: Junior and senior electives may be taken in Advanced Military or Air Science. Planning of the electives will be in consultation with student's adviser.

**DESCRIPTION OF COURSES****311. Mechanical Drawing**

Instruction in proper use of drafting instruments and materials. Lettering. Applied Geometry. Emphasis placed upon accuracy and neatness. Credit 3(0-6).

**312. Mechanical Drawing**

Continuation of M. E. 311. Fundamentals required for machine drawing including applied Geometry, Orthographic projection. Pictorial representation including isometric and oblique drawing. Sections. Prerequisite: M. E. 311. Credit 3(0-6).

**314. Descriptive Geometry**

Theory of projection: Solution of Theoretical and practical problems involving size, shape, and relative position of common geometric magnitudes such as points, lines, planes, curved surfaces and solids. Surface development and intersection. Credit 3(1-4).

**317. Pattern Making**

Care and use of tools, principles of planning, squaring and laying out work. Laboratory practices and modern methods of pattern making. Wood used, glued joints, methods of building up draft shrinkage, coating and storage. Small individual projects. Credit 3(0-6).

**321. Mechanism**

A study of various types of mechanisms employed in the design of machines such as linkages, belting, cams and followers, gears, cones and wheel trains. Prerequisite: M. E. 323, Math. 313, Physics 321. Credit 3(2-2).

**323. Mechanical Drawing**

Drawing for the shop. Metal fastenings, springs, gears, detail and assembly drawings, tracings, methods of reproducing drawings. Prerequisite: M. E. 314. Credit 3(0-6).

**326. Thermodynamics. (Same as Physics 332)****327. Contracts and Specifications**

Elementary principles of contracts involving bids and bidders; methods of payment for contracts and extra work; preparation and writing of specifications. Prerequisite: Eng. 213. Credit 3(3-0).

**328. Machine Shop Practice**

A study of the theory, construction and operation of various machine tools, such as lathes, milling machines, shapers and the use of special tools and measuring instruments. Prerequisite: M. E. 311. Credit 2(0-4).

**329. Machine Shop Practice**

Construction of some project requiring the use of various machine tools and measuring instruments. Prerequisite: M. E. 328. Credit 2(0-4).

**330. Machine Shop Practice**

Continuation of M. E. 329. Credit 2(0-4).

**331. Mechanics**

Static, analytical and graphic treatment of concurrent, nonconcurrent systems of coplanar and non-coplanar forces, and parallel forces, couples, stresses in frames and trusses. Distribution forces, center of gravity, moment of inertia and radii of gyration of plane areas and solids. Prerequisite: Physics 321, Math. 323. Credit 5(5-0).

**332. Mechanics**

Dynamics and Kinetics, Rectilinear and curvilinear motion of a particle, relative velocities and acceleration, rotary motion of a body, work and energy, plane motion of a body, impact, moment of momentum. Prerequisite: M. E. 331. Credit 5(5-0).

**333. Strength of Materials**

Shear and bending moment diagrams, stresses in beams, shafts, and columns. Combined stresses, deflection in beams, reinforced concrete beams, fiber stresses in beams and their distribution. Tension, compression and torsion. Prerequisite: M. E. 332. Credit 5(5-0).

**334. Heating and Ventilating**

A study of the theory, design and installation of hot air, direct and indirect steam, hot water and fan heating systems; central heating and temperature control. Computations for heat losses and size of principal equipment. Layout of piping, ducts and auxiliary apparatus. Lectures, recitations. Credit 3(3-0).

**335. Heating and Ventilating**

Continuation of 334 with special attention given to air analysis and air conditioning. Discussion of methods of air refrigeration, distribution, humidity control and conditioning equipment. Lectures, recitations. Credit 3(3-0).

**336. Heat Power Engineering**

A description and analytic study of the principles involved in the application and utilization of heat in the steam boiler, steam engine, steam turbine and power plant auxiliaries, elementary thermodynamics, fuels and combustion. Prerequisite: Physics 332. Credit 5(5-0).

**337. Hydraulics**

Elementary principles of hydrostatics and hydrokinetics; laws of statics; dynamic pressure, flow of water through orifices, tubes, nozzles, weirs, pipe lines and open channels, hydraulic friction and accompanying losses; water measurements in pipes and open channels. Prerequisite: M. E. 332; Physics 322. Credit 3(3-0).

**338. Internal and Combustion Engines**

A study of the Otto and Diesel type of engines and their auxiliaries; fuel performance; design, applications and economics. Discussions, problems. Prerequisite: Physics 332. Credit 5(5-0).

**339. Metallurgy**

Production of refined ferrous and non-ferrous metals from their ores; properties of metals and alloys as related to structure and treatment; heat treatment; microscopic examination; casting, shaping and welding. Prerequisite: Chem. 113. Credit 3(3-0).

**341. Machine Design**

A study of the properties of materials, the stresses in machine parts and procedures in design calculations. Lectures, recitations and problems. Prerequisite: M. E. 321 and 333. Credit 5(5-0).

**342. Machine Design**

Design of machine elements involving a consideration of static and dynamic forces, critical speeds and the application of the theories of strength and resistance of materials. Lectures, recitations and design periods. Prerequisite: M. E. 341. Credit 5(3-4).

**343. Machine Design**

A study of the design of gears and gear trains, shafts, screws, springs, clutches and castings. Prerequisite: M. E. 342. Credit 5(3-4).

**344. Heat Power Engineering**

A study of modern central and isolated power plants, fuels, combustion, boilers, settings, stoker, fuel and ash conveying systems and experimental tests. Prerequisite: M. E. 336. Credit 5(4-2).

**345. Heat Power Engineering**

Continuation of M. E. 344 with special attention given to steam engines, steam turbines, condensers, pumps, economics of power plants and experimental tests on various plant auxiliaries. Credit 5(3-4).

**346. Testing Materials Laboratory**

Laboratory work devoted to experiments and standards tests on various engineering materials, including steel, iron, wood, brick, sand, gravel, cement and concrete. Prerequisite: M. E. 333. Credit 2(0-4).

**347. Hydraulic Machinery**

A study of the theory, construction and operating characteristics of the principal types of hydraulic machinery. Lectures, recitations problems. Credit 3(3-0).

**351, 352. Mechanical Engineering Laboratory**

The testing of steam and internal combustion engines and equipment, calibration of instruments. Advanced experimental study in the field in which the student is interested. Prerequisite: M. E. 341, 344. Credit 2(0-6), 2(0-6).

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**DEPARTMENT OF MUSIC**

Music is recognized as an important part of life. The principal and ultimate aim of our courses is directed toward the development of interest and a sincere desire to understand and to appreciate more fully all types of music. The curriculum is designed to give the student a thorough training so that he will be prepared to teach music, to continue the study of music after the completion of these courses, and to be an influencing factor in the cultural development of his community.

**Suggested Outline of Courses for Majors and Minors in Band Music****Freshman Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Math. 311, 312 College Algebra, Trig. ....	5(5-0)	5(5-0)	.....
Mus. 227-1a, 227-1b, 227-1c, Piano Class ..	1(0-2)	1(0-2)	1(0-2)
Mus. 240-2a, 240-2b, 240-2c, Senior Band ..	1(0-5)	1(0-5)	1(0-5)
Eng. 211, 212, 213 Grammar and Comp. ....	5(5-0)	5(5-0)	5(5-0)
Fr. 211, 212, 213, Beginners French .....	5(5-0)	5(5-0)	5(5-0)

**Sophomore Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mus. 221, 222, 223, History of Music .....	3(3-0)	3(3-0)	3(3-0)
Mus. 224, 225, 226, Harmony .....	3(3-0)	3(3-0)	3(3-0)
Mus. 227-2a, 227-2b, 227-2c, Advanced Piano Class .....	1(0-2)	1(0-2)	1(0-2)
Mus. 228-1a, 228-1b, 228-1c, Major Instrument .....	2(0-5)	2(0-5)	2(0-5)
Mus. 228-2a, 240-2b, 240-2c, Senior Band ..	1(0-5)	1(0-5)	1(0-5)
History 211, 213, 221 .....	5(5-0)	5(5-0)	5(5-0)
Phy. 311, 312 .....	5(4-2)	5(4-2)	.....

**Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mus. 217 Percussion Instruments .....	2(1-2)	.....	.....
Mus. 218 Woodwind Instruments .....	.....	2(1-2)	.....
Mus. 219 Brass Instruments .....	.....	.....	2(1-2)
Mus. 228-2a, 228-2b, 228-2c Major Inst. ....	2(0-5)	2(0-5)	2(0-5)
Mus. 229a, 229b, 229c Minor Instrument .....	1½ (0-3)	1½ (0-3)	1½ (0-3)
Mus. 236 Public School Methods .....	3(3-0)	.....	.....
Mus. 240-3a, 240-3b, 240-3c Senior Band ...	1(0-5)	1(0-5)	1(0-5)
Minor or elective (Education) .....	8(8-0)	8(8-0)	8(8-0)

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mus. 228-3a, 228-3b, 228-3c Major Inst. ....	2(0-2)	2(0-2)	2(0-2)
Mus. 244, Band Technics .....	5(5-0)	.....	.....
Mus. 247, Band Arranging .....	.....	.....	5(5-0)
Minor or elective (Education) .....	10(10-2)	9(9-0)	7(7-0)

This outline of courses should be worked in with the required courses for all students in the School of Education and Science. All students should remember that most courses in music are in sequence, and each sequence should be started in the Fall quarter.

It should be noted that all majors and minors in band music will be required to play in one of the bands throughout the four years, including participation in the Senior Band for one year. Participation on student recitals is also a requirement.

A course in instrumental music designed to prepare students to organize and to train high school bands is available to qualified persons. Those interested should apply to the band director and be prepared to take a preliminary examination upon entering.

All persons interested in either a major or a minor in band music are required to study piano for two years and complete instruction upon both a major and a minor instrument.

**COURSES OF INSTRUCTION****MUSIC APPRECIATION AND HISTORY**

Six hours of Music Appreciation or Art Appreciation are required in the School of Education and Science. These must be taken in the Freshman year.

**211. Music Appreciation**

This course aims to provide a general background for the listener and includes a study of rhythm, harmony, melody, simple form, vocal music, incidental music and the orchestra. Credit 2(1-2).

**212. Music Appreciation**

This course covers a study of classicism and romanticism, program and descriptive music, sonata form and the symphony. Credit 2(1-2).

**213. Music Appreciation**

This course deals with the more difficult aspects of listening: chamber music, the violin sonata, Bach and the polyphonic style, Impressionism, Expressionism, and modern music.

**221. History and Appreciation of Music**

Music of the ancient Greeks and the medieval period is carefully studied and examined. Credit 3(3-0).

**222. History and Appreciation of Music**

Music of the seventeenth, eighteenth and nineteenth centuries is carefully studied and examined. Credit 3(3-0).

**223. History and Appreciation of Music**

Music of the Neo-Romantic and Modern Periods is carefully studied and examined. Credit 3(3-0).

**THEORY****224. Harmony**

This course includes the study of intervals, triads, and an introduction to keyboard harmony, and exercises in ear training and dictation. Credit 5(5-0).

**225. Harmony**

This course is a study of implied modulation, three part vocal writing, the minor mode and a continuation of keyboard harmony and ear training. Credit 3(3-0).

**226. Harmony**

This is a continuation of 225, introducing elements of composition, as well as providing advanced work in ear training and dictation. Credit 3(3-0).

**247. Band Arranging**

These courses include a practical study of all instruments, the art of writing for small combinations of instruments, the art of sectional writing for instruments, and the art of scoring for full band. As a class project one composition will be scored for full band. Credit 5(5-0) each.

**MUSIC EDUCATION****209. Solfeggio**

This course is learning to sing simple melodies at sight. Credit 1(0-2).

**217. Percussion Instruments**

The percussion instruments are studied, and the proper methods for teaching these instruments are carefully analyzed. Some proficiency on at least one instrument of this section is required of each student. Credit 2(1-2).

**218. Woodwind Instruments**

The woodwind instruments are studied, and the proper methods for teaching these instruments are carefully analyzed. Some proficiency on at least one instrument of this section is required of each student. Credit 2(1-2).

**219. Brass Instruments**

The brass instruments are studied, and the proper methods for teaching these instruments are carefully analyzed. Some proficiency on at least one instrument of this section is required of each student. Credit 2(1-2).

**235. Public School Methods**

This course deals with the materials and methods for teaching in the elementary schools. Credit 5(5-0).

**236. Public School Methods**

This is a comprehensive course covering materials and methods in the public schools. Credit 3(3-0).

**237. Conducting**

This course includes the study of the technique of the baton and the study of the different forms of conducting. Some time is devoted to the problems of score-reading. An opportunity is given for practical experience in conducting both vocal and instrumental groups. Credit 3(1-4).

**244. Band Techniques**

The student learns about school band organization and administration, band rehearsal techniques, drilling, tuning, motivation, student practice, special problems relating to the school band, survey of recognized methods, materials, and literature. Credit 5(5-0).

**246. Voice Class**

This course is open to qualified persons who wish to know the proper use of the voice. It is designed to help the potential classroom teacher who may assist with vocal music, and for the student who wishes to serve as a soloist in a community, church or civic choral group. The principals of breathing and breath control are stressed. Easy songs are sung in Italian, English and the other languages. Credit 2(0-4).

### APPLIED MUSIC

In conference with band instructors, each music major will select a major instrument and two minor instruments. One of the minor instruments should be piano if the student has not had such study. Thirty-two quarter hours of applied music are required for State of North Carolina certification and these instruments should be started not later than the sophomore year. Music 217, 218, 219 may be included in the total number of hours for credit. Major instruments must be studied for three years and minor instruments five quarters, all preferably consecutively and uninterrupted.

**Definition of Major Courses**—All major courses give two hours of credit each quarter. A major course is designed to give intensive and extensive training in an instrument and includes an individual lesson of one hour weekly, or the equivalent in smaller groups, or the combination of the two plans, as the character of the work is best served. Participation in the regular Senior ensemble organizations, with or without credit, and a minimum of one and one-half hours of daily practice are required. The following instruments are suitable for major concentration:

#### MAJOR INSTRUMENTS

Piano	Saxophone	Trombone—Baritone
Flute	Cornet—Trumpet	Tuba—Bass
Clarinet	French Horn	Percussion

**NOTE:** All examinations in major instruments are by jury composed of faculty.

**Definition of Minor Courses**—All minor courses give one and one-half hours credit each quarter. A minor instrument course is to give those students whose major instrument is in another family, a practical approach to an additional instrument, preferably in a different instrument family. These courses give less credit than major courses and do not attempt to follow the same sequence or intensity of study as required by the major courses. Instruction in minor courses include an individual lesson of one-half hour each week or the equivalent in small groups, or the combination of the two plans, as the character of the work is best served. One hour of daily practice is required. The following courses and instruments are suitable for minor concentration:

#### MINOR INSTRUMENTS

Piano	Bass Viol	Saxophone
Organ	Harp	Cornet—Trumpet
Violin	Flute	French Horn
Viola	Oboe	Trombone—Baritone
Cello	Bassoon	Tuba—Bass
	Clarinet	Percussion

**227-1abc, 2abc. Piano Classes**

These courses are designed for band majors and minors. Simple compositions, scales and arpeggios are studied to facilitate the study of theory and harmony and the playing of simple accompaniments. Credit 1(0-2).

**228-1abc, 2abc, 3abc. Major Instruments**

In conference with band instructors, each music major will select a major instrument. Proficiency on major instruments will be determined by lessons and by regular appearance on student recitals. Credit 2(0-5).

**229abc. Minor Instruments**

In conference with band instructors, each music major will select a minor instruments. Credit 1½ (0-3).

**ENSEMBLES****210abc. Beginners' Band**

This course is primarily for any student who desires to learn to play an instrument or for minors in Band Music who desire to change instruments after entering college. Credit 1(0-5).

**220abc. Intermediate Band**

This band is primarily for those students who have passed Music 210abc, or have had less than three years of instrumental experience, or who have been advised to join by the band director. Credit 1(0-5).

**240-1abc. Senior Band**

This band is primarily for students planning to major or minor in band music and is open to qualified freshmen who have had at least two years of previous training in a band instrument. This is the College Concert and Marching Band, and regular attendance is required at all rehearsals and performances. Credit 1(0-5) each quarter.

**240-2abc. Senior Band**

This band is for qualified sophomores. Credit 1(0-5) each quarter.

**Music 241. Women's Band**

This band is primarily for women students who have had previous experience and training on a band instrument. The band supplements the Marching Band in the fall quarter and prepares minor concert appearances during the winter and spring quarters. Regular attendance is required at all rehearsals and performances. May be taken repeatedly for credit. Credit 1(0-5).

**240-3abc. Senior Band**

This band is for qualified juniors. Credit 1(0-5) each quarter.

**240-4abc. Senior Band**

This band is for qualified seniors. Credit 1(0-5) each quarter.

**248-1abc, 2abc, 3abc, 4abc. Choir**

Representative sacred and secular choral masterpieces from the sixteenth century to the present day are studied and presented. The choir assists in the religious and civic life of the college community. Credit 1(0-4) each quarter.

**249-1abc, 2abc, 3abc, 4abc. Men's Glee Club**

The best in choral literature for male voices is studied and presented. Credit  $\frac{1}{2}$  (0-2) each quarter.

**PHILOSOPHY AND RELIGION****(Philosophy)****Philosophy 211. Introduction to Philosophy. (Formerly Religious Education 241)**

An introductory course covering such topics as theories of reality, the nature of mind and knowledge, and the higher values of life. Credit 3(3-0).

**Philosophy 212. Ethics. (Formerly Religious Education 233)**

This course deals with the study of moral origins and the interpretation of standards of value in private, business and public life. Credit 3(3-0).

**Philosophy 213. Philosophy of Religion. (Formerly Religious Education 242)**

An introduction to the study of man's quest for wisdom about religious matters. An examination of conceptions of God, ways of knowing God, problems of belief in God, good and evil, prayer, sin and suffering, and immortality. Credit 3(3-0).

**Philosophy 222. Logic**

An introductory study of rules of correct thinking and of their application to practical affairs; a consideration of topics of meaning, induction and deduction, inference, and causation. Credit 3(3-0).

**Philosophy 223. Survey of Western Thought**

An introductory examination of systems of philosophic thought of selected outstanding representatives of the classical, medieval, and modern periods in philosophy. Prerequisite: One course in Philosophy or consent of the instructor. Credit 3(3-0).

**(Religion)****Religion 211. Introduction to Bible Study.**

An introductory course in the history, literature and principal ideas of the Bible. Credit 3(3-0).

**Religion 212. Orientation in the Study of Religion**

An examination of the nature, function, value, and basic concepts of religion. Credit 3(3-0).

**Religion 213. The Church in Contemporary Society. (Formerly Religious Education 243)**

A brief survey of the development of the Christian church with emphasis upon the role of organized religion in contemporary affairs. Credit 3 (3-0).

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**DEPARTMENT OF PHYSICAL EDUCATION**

The general physical education program aims to promote the health, physical and mental efficiency of each student enrolled in the college and to provide carry-over interests and activities for all. A Health examination is given to each new student before he matriculates so as to determine his needs in physical education.

Unless officially excused by the college physician two class periods each week are required of all students. Juniors and seniors are permitted to elect their activity classes if all of the health, posture, and credit requirements have been met.

Students must be prepared, upon matriculation, to place their orders for the activity uniforms, the approximate cost for which is \$12.00 for men and \$8.00 for women.

**INTRAMURALS**

A program of intramural activities is conducted, on an elective basis, for all students. Schedules and tournaments are arranged, and equipment is made available by the physical education majors.

**VARSITY ATHLETICS**

The intercollegiate athletic program is under the supervision and direction of the Athletic Committee, consisting of faculty, alumni and students. The student members are appointed to the committee by the college president, on the basis of merit and achievement. The sports included in the program are: football, basketball, baseball, track, boxing and tennis. The college is a member of the Central Intercollegiate Athletic Association, the National Association of Intercollegiate Athletics, and the National Collegiate Athletic Association, and is subject to the rules and regulations of those bodies.

The Varsity letter shall be awarded by the Athletic Committee, upon recommendation of the coaching staff, to members of the football and basketball teams who have participated in a minimum of one-half of the total number of periods played in intercollegiate competition. In baseball, participation in one-half of the total number of innings played is required with the exception of: for pitchers who must have partici-

pated in at least one-fourth of the total number of innings played in intercollegiate competition. In the remaining sports, the award is made to the athlete who participates through the season with credit, with a provision that: to members of the track team who win two points in the conference or intersectional meets; to members of the tennis team who have won at least two matches in the conference tournament; and, to members of the boxing team who have won at least two matches in the conference tournament. The Varsity letter is awarded to members of the cheering squad who serve with credit.

### SERVICE COURSES IN HEALTH AND PHYSICAL EDUCATION

The general courses in physical education, based upon the physical examination given at the beginning of the year, are required of all freshmen and sophomore men and women. A wide variety of athletic sports and games is provided to meet the needs and interests of the student and to acquaint him with many activities in the field of physical education. Special attention is given toward developing skills and an understanding of rules.

#### COURSES FOR WOMEN

##### Freshman

210a. Soccer and Speedball. Fall. Credit 1(0-2).

210b. Basketball. Winter. Credit 1(0-2).

210c. Softball and Volleyball. Spring. Credit 1(0-2).

213. Personal Hygiene. (Required of Freshmen).

Consideration is given to personal and mental hygiene with a view to establishing within the student a basis for positive health and efficiency through the development of desirable health habits, knowledge and attitudes. Credit 1(0-2).

215a,b,c. Individual Physical Education Activities

(Fall, Winter, Spring.) Special activities designed for those women whose examinations show that they are unable to participate in regular physical education classes. Credit 1(0-2) each quarter.

219. Aquatics. (Required of Freshmen).

This course is designed to enable the student to acquire the elementary skills outlined in the American Red Cross standards for beginning swimmers. Fall, winter, spring. Credit 1(0-2).

##### Sophomore

220a. Hockey. Fall. Credit 1(0-2).

220b. Stunts and Tumbling. Winter. Credit 1(0-2).

**220c. Tennis and Archery.** Spring. Credit 1(0-2).

**216a,b,c.**

A continuation of the course 215a, b, and c. (Fall, Winter, Spring). Credit 1(0-2) each quarter.

### **Electives**

**211t. Tap Dancing.** Credit 1(0-2).

**212f. Folk Dancing.** Credit 1(0-2).

**217a. The Modern Dance.** (For Beginners.) Credit 1(0-2).

**217b. The Modern Dance.** (For Intermediates.) Credit 1(0-2).

**217c. The Modern Dance.** (For Advanced Students.) Credit 1(0-2).

**209. First Aid** Credit 1(0-2).

**234. Personal and Community Health.** Credit 5(5-0).

### **COURSES FOR MEN**

#### **Freshman**

**210a. Speedball.** Fall. Credit 1(0-2).

**210b. Stunts and Tumbling.** Winter. Credit 1(0-2).

**210c. Volleyball, Track and Field.** Spring. Credit 1(0-2).

**213. Personal Hygiene.** (Required of all Freshmen.) Credit 1(1-0).

**215a,b,c. Individual Physical Education Activities**

(Fall, Winter, Spring.) Special activities designed for those men in whose examinations show that they are unable to participate in the regular physical education classes. Credit 1(0-2).

**219. Aquatics.** (Required of Freshmen).

This course is designed to enable the student to acquire the elementary skills outlined in the American Red Cross standards for beginning swimmers. (Fall, Winter, Spring.) Credit 1(0-2).

#### **Sophomore**

**220a. Touch Football.** Fall. Credit 1(0-2).

**220b. Basketball and Advanced Tumbling.** Winter. Credit 1(0-2).

**220c. Softball and Badminton.** Spring. Credit 1(0-2)

**216a,b,c.** A continuation of the course 215a,b,c. (Fall, Winter, Spring) Credit 1(0-2)

**Electives**

**213t. Tennis and Archery.** Credit 1(0-2).

**226a. Boxing.** Credit 1(0-2).

**208. First Aid.** Credit 1(0-2).

**208. First Aid**

(Men and Women). Courses designed for students other than those majoring in physical education. First Aid to the injured in the home, school and community. A consideration of First Aid practices with laboratory experience as well as lecture and discussion opportunities. Successful completion of this course leads to the Red Cross Standard certificate in First Aid. Credit 1(0-2).

**Other Courses**

**227. Principles, Practices, and Procedures in Physical Education**

A study is made of the underlying principles, methods and procedures of physical education for elementary school teachers. The course provides practice in the utilization of materials and techniques for teaching graded games, stunts, rhythms, and similar activities on the elementary level. Credit 3(2-2).

**228. Principles, Practices, and Procedures in Health Education**

A study of the basic principles, methods and procedures for developing a health education program in the elementary school. The course provides theory and practice in the organization and presentation of school health education with special emphasis upon instructional materials and techniques for the elementary school teacher. Credit 3(2-2).

**234. Personal and Community Health**

(Men and women). This course aims to establish within the individual a basis for positive health and effective living through a consideration of those factors which effect his personal and health efficiency. Consideration is also given to the field of public health as it affects the community, with special emphasis being placed on ways in which the individual and community agencies may improve and maintain group health. Credit 5(5-0).

**REQUIREMENTS FOR MINOR IN PHYSICAL EDUCATION****Theory Courses**

243. The Teaching of Physical Education .....	5 hours
244. The Teaching of Health Education .....	3 hours
245. History and Principles of Physical Education .....	5 hours
249. Administration of Health and Phy. Edu. ....	5 hours

### Activity and Coaching Courses

213is. Individual Sports .....	1 hour
214. Rhythemics .....	1 hour
217. The Modern Dance (Women) .....	1 hour
218. Basketball, Stunts and Tumbling .....	1 hour
219a. Swimming, Track and Field .....	1 hour
225. Coaching of Football (Men) .....	2 hours
225a. Coaching of Softball and Volleyball (Women) .....	2 hours
225c. The Teaching of Individual Sports .....	2 hours
225d. Coaching of Track and Baseball (Men) .....	3 hours
225e. Teaching of Social, Tap and Square Dancing (Women) ..	2 hours
226. Group Games, Volleyball and Football or Soccer .....	1 hour
229a. Combatives, and Baseball (Men) .....	1 hour

Unless indicated otherwise, all courses will be taken by men and women.

### MAJOR CURRICULUM IN PHYSICAL EDUCATION

The professional curriculum in physical education is designed to prepare students to become teachers of health and physical education, and athletic coaches. The physical education teacher is generally expected to teach other courses. It is, therefore, recommended that the student, upon counsel of his advisor, pursue courses leading to a second major or double minor.

### MAJOR IN PHYSICAL EDUCATION

#### Freshman Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Eng. 211, 212, 213 .....	5(5-0)	5(5-0)	5(5-0)
Math. 311, 312 .....	5(5-0)	5(5-0)	.....
Hist. 210 .....	.....	.....	5(5-0)
Phy. Ed. 210a, 210b, 210c .....	1(0-2)	1(0-2)	1(0-2)
Phys. Ed. 213 .....	1(1-0)	.....	.....
Ed. 211 .....	1(0-2)	.....	.....
Art 314, 315, 316 .....	2(0-2)	2(0-2)	2(0-2)
or			
Music 211, 212, 213 .....	2(0-2)	2(0-2)	2(0-2)
R.O.T.C. 211, 212, 213 .....	2(2-2)	2(2-2)	2(2-2)
Vocations .....	3(0-6)	3(0-6)	3(0-6)
Phys. Ed. 219 .....	.....	.....	1(0-2)

**Sophomore Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Chem. 111, 112 .....	5 (3-4)	5 (3-4)	5 (3-4)
Bot. 111 .....	5 (3-4)	5 (3-4)	5 (3-4)
Zool. 111 .....	.....	5 (3-4)	5 (3-4)
Eng. 220, 221, or 222 .....	.....	.....	5 (5-0)
Hist. 213, 221, or 222 .....	5 (5-0)	.....	5 (5-0)
Phy. Edu. 214 .....	.....	1 (0-5)	.....
Phy. Edu. 217 (women) .....	1 (0-5)	.....	.....
Phy. Edu. 218 .....	.....	1 (0-5)	.....
Phy. Edu. 219a .....	.....	.....	1 (0-5)
Phy. Edu. 226 .....	1 (0-5)	.....	.....
Phy. Edu. 234 .....	.....	5 (5-0)	.....
Phy. Edu. 254 .....	2 (1-4)	.....	.....
Edu. 221, General Psychology .....	.....	.....	5 (5-0)
Phy. Edu. 229a .....	.....	.....	1 (0-5)
R.O.T.C. 221, 222, 223 (men) .....	.....	.....	.....

**Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Ed. 222 .....	3 (3-0)	.....	.....
Ed. 223 .....	3 (3-0)	.....	.....
Ed. 224 .....	.....	3 (3-0)	.....
Ed. 231 .....	.....	3 (3-0)	.....
Ed. 236 .....	.....	.....	3 (3-0)
Ed. 237 .....	.....	.....	3 (3-0)
Phy. Edu. 221 Human Anatomy .....	5 (3-4)	.....	.....
Phy. Edu. 213is .....	.....	.....	1 (0-5)
Phy. Edu. 225 Teach. of Football (men) ..	2 (2-1)	.....	.....
Phy. Edu. 225b Teach. of Basketball .....	.....	2 (2-1)	.....
Phy. Edu. 225c Teach. of Ind. Sports .....	2 (2-1)	.....	.....
Phy. Edu. 225d Teach. of Track and Baseball (men) .....	.....	.....	3 (2-2)
Phy. Edu. 225e Teach. of Social, Tap and Folk Dancing .....	2 (2-1)	.....	.....
Phy. Edu. 225ss Teach. of Soccer and Hockey .....	2 (2-1)	.....	.....
Phy. Edu. 225w Teach. of Aquatics .....	.....	2 (2-1)	.....
Phy. Ed. 236 Prin. of Health Ed. .....	.....	3 (3-0)	.....
Phy. Ed. 241 Physiology .....	.....	.....	5 (5-0)
Phy. Ed. 243 the Teaching of Phy. Ed. ....	.....	.....	5 (3-4)
Phy. Ed. 245 Hist. and Prin. of Phy. Ed. ...	5 (5-0)	.....	.....

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Phy. Edu. 238 First Aid and Safety .....	3 (3-0)	.....	.....
Phy. Edu. 225a Teach. of Softball and volleyball (women) .....	2 (2-1)	.....	.....
Phy. Edu. 225n Teaching of Net Games .....	2 (2-1)	.....	.....
Phy. Edu. 222 Kinesiology .....	3 (3-0)	.....	.....
Phy. Edu. 223 Individual Phy. Edu. .....	.....	3 (3-0)	.....
Phy. Edu. 232 Community Recreation .....	3 (3-0)	.....	.....
Phy. Edu. 224 The Teaching of Health Ed. ....	3 (3-03)	.....	.....
Phy. Edu. 249 Organization and Administ. of Health and Phy. Edu. .....	.....	5 (5-0)	.....
Phy. Edu. 253 Problems in Phy. Edu. ....	.....	.....	3 (3-0)
Phy. Edu. 255 Problems in Health Edu. .	.....	3 (3-0)	.....
Econ. 231 Economics .....	5 (5-0)	.....	.....
H. E. 132 Child Development .....	4 (4-0)	.....	.....
Ed. 251 Practice Teaching .....	.....	.....	5 (1-8)
Res. 246 Research .....	.....	3 (3-0)	.....
Soc. 231 Sociology .....	.....	.....	5 (5-0)

**COURSES FOR MAJOR AND MINOR STUDENTS**

The activity courses listed below are designed for major and minor students. Instruction is given in methods of teaching activities in elementary and secondary schools; and the correlation of physical education activities with other school subjects. Special attention is given to the organization of demonstrations, pageants, and playground activities.

**212f. Folk Dancing**

Characteristic dances of many countries, including Sweden, Hungary, Austria, Spain, France, Holland, the United States and others. Credit 1(0-2).

**213is. Individual Sports**

(Men and women). Technical study is made of such activities as shuffleboard, handball, ping-pong, badminton, croquet, archery, and tennis. Credit 1(0-5).

**214. Rhythms**

(Men and women). Activities included are clog, tap and folk dancing. Credit 1(0-5).

See above.

**217. The Modern Dance**

(Women). A concentrated course in the Modern Dance which is required of all women physical education major and minor students. Credit 1(0-5).

**218. Basketball. Stunts and Tumbling.**

(Men and Women). Two different sections. This course is designed to familiarize the student with the rules and techniques of basketball. The second half of the course includes concerted practice in mastering skills in stunts and tumbling. Credit 1(0-5).

**219a. Swimming, Track and Field**

(Men and Women). Two different sections. The first half of this course is designed to develop proficiency in such basic aquatic skills as the crawl, sidestroke, breaststroke, treading, floating, and diving. The second half provides the opportunity for developing a mastery of the skills and techniques of track and field. Prerequisite: 219. Credit 1(0-5).

**221. Human Anatomy**

(Men and Women). A brief study is made of the human body as it relates to students of physical education. Prerequisite: Zoology 111. Credit 5(3-4).

**222. Kinesiology**

(Men and Women). A study of the bodily movements, types of muscular exercises and their relation to the problems of bodily development. Prerequisites 221, 241. Credit 3(3-0).

**223. Individual Physical Education**

(Men and Women). A study is made of methods of examining and determining needs of the handicapped; activities suitable for individuals with abnormal body conditions, and the conduct of a program of restricted activities to meet their needs. Prerequisite: Human anatomy. Credit 3(3-0).

**225. The Teaching of Football**

(Men). A study is made of the history of football, rules, skills, techniques, methods of organizing practices, strategy, team offenses and defenses, and of various modern formations and systems of play. Credit 2(0-2).

**225a. The Teaching of Softball and Volleyball**

(Women). A study is made of the history of rules, skills, teaching techniques, methods of organizing, and teaching softball and volleyball. Credit 2(1-2).

**225b. The Teaching of Basketball**

(Men and Women). Two different sections. A study is made of the history and development of basketball, the skills, individual and team tactics, strategy, and the techniques of teaching basketball. The women's section provides in addition, instruction and practice in officiating basketball. Credit 2(1-2).

**225c. The Teaching of Individual Sports**

(Men and Women). This course is designed to familiarize students with methods and techniques for teaching such individual sports as shuffleboard, handball, ping-pong, badminton, archery, and tennis. Credit 2(1-2).

**225d. The Teaching of Track and Baseball**

A study is made of the history and development of each sport, the skills, individual and team offenses, and defenses, strategy, and the techniques of teaching track and baseball. Credit 3(2-2).

**225e. The Teaching of Social, Tap and Square Dancing**

(Women). Consideration is given to the methods of teaching social, tap, and square dancing. Credit 2(2-2).

**225N. The Teaching of Net Games**

(Men and Women). A study is made of the methods of teaching a variety of net games including volleyball. Newcomb, badminton, tennis and deck tennis. Credit 2(1-2).

**225ss. The Teaching of Soccer and Hockey**

(Women). A study is made of the history and development of each sport, the skills, individual and team tactics, strategy and techniques of teaching soccer and hockey. Credit 2(2-2).

**225w. The Teaching of Swimming, and Lifesaving**

(Men and Women). This course is designed to develop those skills required for the American Red Cross standard Lifesaving certificate, and to provide instruction in desirable methods and techniques for the teaching of swimming and aquatic events. Prerequisites: 219, 219a or equivalent. Credit 2(1-2).

**226. Group Games and Football or Hockey**

(Men and Women). Two different sections. A study is made of a large variety of games of lower organization of the circle, group and line type, which might be suitable for the playground, the gymnasium, camp, and for adult gatherings. A concentrated study is also made of the techniques of football for men and hockey for women. Credit 1(0-5).

**229a. Combatives and Baseball**

(Men). A course designed to teach a wide range of dual, and group or team combatives running exercises class formations, and concentrated practices in mastering the skills and techniques of the sport of baseball. Credit 1(0-5).

**232. Community Recreation**

(Men and Women). A study is made of city, state and national organizations. Practice is given in the general principles and techniques in the organization and promotion of leisure activities for home, school and community. Credit 3(3-0).

**232a. Nature and Function of Play**

(Men and Women). A brief study of the history and theories of play, and play as a function of enriched living. Credit 2(2-0).

**234. Personal and Community Health**

(Men and Women). This course aims to establish within the individual a basis for positive health and effective living through a consideration of those factors which effect his personal and health efficiency. Consideration is also given to the field of public health as it affects the community, with special emphasis being placed on ways in which the individual and community agencies may improve and maintain group health. Credit 5(5-0).

**236. Principles of Health Education**

(Men and Women). A study is made of principles for the teaching of health education in elementary and high schools. A close correlation with physical education and other subjects is outlined and encouraged. Prerequisite: Personal and Community Hygiene. Credit 3(3-0).

**238. First Aid and Safety**

(Men and Women). The first two thirds of this course is devoted to a study of techniques of first aid to the injured in the home, school, and community and to the teaching of safety measures to be practiced in daily living. The standard certificate of the American National Red Cross are issued upon successful completion of this phase. In the last third of the course consideration is given to the prevention and care of injuries occurring in physical education classes and competitive sports. Credit 3(2-2).

**241. Physiology**

(Men and Women). A course in elementary physiology, covering the muscular, cardiorespiratory, nervous, gastro-intestinal and reproductive systems. Credit 5(5-0).

**243. The Teaching of Physical Education**

(Men and women). Two different sections. This course points out the best procedures in acquiring desired outcomes in physical education. Practice is given to planning, organizing and supervising physical education class activities. Prerequisites: Principles of physical education and an adequate number of other physical education courses. Credit 5(3-4).

**244. The Teaching of Health Education**

(Men and Women). In this course consideration is given to the methods, materials and procedures for the teaching of health in the elementary and high schools. Prerequisites: Principles of Health Education and Personal Hygiene. Credit 3(3-0).

**245. History and Principles of Physical Education**

(Men and Women). A study of the evolution of physical education from the earliest time down to the present day. Consideration is given to the relationship of physical education to education and to national life and ideals through the different historical periods. A critical analysis is made of the scientific basis for physical education with applications of the aims and objectives to the modern concepts of education.

**249. The Organization and Administration of Health and Physical Education**

(Men and Women). A study of philosophy and policies in the administration of a health and physical education program, including the classification of students, the staff, teaching load, time schedule, finance, the gymnasium, lockerrooms, equipment, and inter-scholastic athletics. Prerequisites: Principles, and an adequate number of other physical education courses. Spring. Credit 5(5-0).

**252. Athletic Officiating**

(Men and women.) Two different sections. Credit 1(0-2).

**253. Problems in Physical Education**

(Men and Women). A study of special administrative problems in the organization of physical education programs and the coordination of its different phases pertinent to men and women of professional preparation. Administrative problems of physical education, including curriculum construction in the light of historical backgrounds, intramural activities, girls' athletics, athletic insurance and athletic associations. Credit 3(3-0).

**254. Field Laboratory Experiences**

(Open to students wishing to major in Physical Education). A course designed to provide opportunities for students to render service to children of various ages through the many community and school resources. Experience is gained by the student through a study of the growth, development and learning processes of the child through supervised activities. Prerequisite: Sophomore standing. Credit 2(1-4).

**255. Problems in Health Education**

This course is designed to give the student opportunity to analyze current problems in health education as they relate to the individual student, the total school program, resources in the community, public relations, and health of the teacher. Prerequisite: 213, 234, 236. Credit 3(3-0).

## DEPARTMENT OF PHYSICS

The work of the Department of Physics is directed toward the following ends: (1) the training of students of the sciences for future graduate work; (2) the training of teachers of physics and the physical sciences for secondary schools; (3) the training of pre-engineering and pre-medical students for later professional work; and (4) the training of the general student in scientific methods of work and in the understanding of the place of physical science in the modern world. Students who are interested in these opportunities should begin the study of physics as early as possible. Three courses in the calculus should be taken in the Sophomore year to provide a good background for major work in the physical sciences and engineering.

### MAJOR IN PHYSICS

#### Junior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 331, Electricity and Magnetism . . . . .			5 (5-0)
M. E. 331, 332 . . . . .	5 (5-0)	5 (5-0)	.....
Physics 332 . . . . .		5 (5-0)	.....
Physics 351, 352, Physical Mathematics . . . . .	5 (5-0)	5 (5-0)	.....
Math. 331, Differential Equations . . . . .			5 (5-0)
Electives . . . . .	8 ( )	3 ( )	8 ( )
	<hr/>	<hr/>	<hr/>
	18 hrs.	18 hrs.	18 hrs.

#### Senior Year

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 334, 335, Electrical Measurements.			
Same as E. E. 334, 335 . . . . .		5 (3-4)	.....
Physics 333 Electronics . . . . .		5 (3-4)	.....
Physics 505 Modern Physics . . . . .			5 (5-0)
Vector Analysis, Math. 501 . . . . .	5 (5-0)		
Physics 507, 508 Electrodynamics . . . . .		5 (5-0)	5 (5-0)
Electives . . . . .	13 ( )	3 ( )	8 ( )
	<hr/>	<hr/>	<hr/>
	18 hrs.	18 hrs.	18 hrs.

### ENGINEERING PHYSICS

#### Freshman Year

(See First Year's Curricula of Engineering, Page 67)

**Sophomore Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mathematics 321, 322, 323 .....	5 (5-0)	5 (5-0)	5 (5-0)
Physics 321, 322, 323 .....	5 (3-4)	5 (3-4)	5 (3-4)
Social Sciences .....	5 (5-0)	5 (5-0)	3 (3-0)
Machine Shop Practice 328, 329 .....	2 (0-4)	2 (0-4)	.....
Mechanism M. E. 321 .....	.....	.....	4 (3-2)
Military Science 221, 222, 223 .....	2 (2-2)	2 (2-2)	2 (2-2)
	<hr/>	<hr/>	<hr/>
	19 hrs.	19 hrs.	19 hrs.

**Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mathematics 331, 501 .....	.....	5 (5-0)	5 (5-0)
Physics 334, 335, 351 .....	3 (1-4)	3 (1-4)	5 (5-0)
Chemistry 141, 142 .....	6 (3-6)	6 (3-6)	.....
Physics 331 .....	.....	.....	5 (5-0)
Physics 505 .....	5 (5-0)	.....	.....
Electives .....	5 hrs.	5 hrs.	5 hrs.
	<hr/>	<hr/>	<hr/>
	19 hrs.	19 hrs.	20 hrs.

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Physics 336, 332, 333 .....	5 (5-0)	5 (5-0)	5 (5-0)
Physics 352 .....	5 (5-0)	.....	.....
Electives .....	8 ( )	13 ( )	13 ( )
	<hr/>	<hr/>	<hr/>
	18 hrs.	18 hrs.	18 hrs.

**Suggested Electives**

Economics 231, 232	Math. 318
Political Sc. 231	M. E. 331, 332
History 213, 221	Physics 353, 507, 508
Education 231	

**COURSES IN PHYSICS****311. Principles of Physics**

A study of the fundamental laws governing bodies at rest and in motion. Molecular properties of Matter, Heat and Temperature measurements. For Non-Technical majors only. Prerequisites: Math. 312. Credit 5 (4-2).

**312. Principles of Physics**

Electricity and Magnetism. Electromagnetic Phenomena. Circuit theory as applied to Direct and Alternating Currents. Conduction of electricity through liquids and gases. Prerequisite: Physics 311. Non-Technical Majors only. Credit 5(4-2).

**313. Principles of Physics**

Wave Motion, Sound and Light. Special emphasis on velocities of sound, Doppler's Principle resonance conditions and musical instruments. Geometrical and Physical optics, also selected topics in Modern Physics. For non-technical majors only. Prerequisite: Physics 312. Credit 5(4-2).

**314. Household Physics**

Special emphasis is given to the applications of mechanics, heat, and electrical principles to the modern household. For majors in Home Economics only. Credit 5(4-2).

**321. General Physics**

Introduction to the fundamental principles of mechanics (statics and kinetics), and heat. Molecular structure, heat and its transformation, and thermometry and heat measurements. Liberal use of mathematics including beginning calculus. Math. 321 should be taken concurrently. Prerequisite: Math. 311, 312, 313. Credit 5(3-4).

**322. General Physics**

Introduction to the fundamental principles of wave motion: Emphasis on velocity of sound in air and other media; its propagation, and acoustics. Extensive study into the geometrical and physical properties of light with selected topics in Modern Physics dealing with other forms of radiation. Prerequisite: Physics 321. Credit 5(3-4).

**323. General Physics**

Introduction to the basic principles of electricity and magnetism. Conduction of electricity through liquids and gases. Circuit theory and measurements. Selected topics in electronics and radioactivity. Prerequisite: Physics 322. Credit 5(3-4).

**331. Electricity and Magnetism**

A presentation of the theory of direct current and alternating current electricity, including topics in magnetism and electricity. Prerequisite: Physics 323. Credit 5(5-0).

**332. Thermodynamics**

The first, second, and third laws of thermodynamics; Carnot cycle and heat engines; thermodynamic properties of gases, liquids, and solids. Prerequisites: Physics 323, Math. 331, concurrently. Credit 5(5-0).

**333. Electron Physics**

A study of cathode rays, charge and mass of the electron, photoelectricity, radioactivity, thermionic emission, radiation and ionization potentials. Prerequisite: Physics 331. Credit 5(5-0).

**334. Electrical Measurements**

Same as E. E. 334. Prerequisite: Physics 323. Credit 3(1-4).

**335. Electrical Measurements**

Same as E. E. 335. Prerequisite: Physics 334. Credit 4(2-4).

**336. Electrical Measurements**

Same as E. E. 336.

**337. Vibration and Sound**

Production, propagation, transmission and reception of sound. Applications to acoustics, mechanics, and electrical problems. Prerequisites: Physics 323, Math. 332. Credit 5(4-2).

**351. Physical Mathematics**

Probability, statistics, graphical methods, least squares, empirical equations. Prerequisite: Math. 322. Credit 5(5-0).

**352. Physical Mathematics**

Complex numbers, series, functions of a complex variable, applications to wave motion. Prerequisites: Math. 322, Physics 323. Credit 5(5-0).

**353. Theoretical Mechanics**

Dynamics of particles and of rigid bodies. Prerequisites: Physics 321, Math. 322. Credit 5(5-0).

**Graduates and Advanced Undergraduates****501. Meteorology**

A study of weather maps and polar front analysis is included together with a discussion of the principles underlying weather forecasting causes of weather changes. Credit 5(5-0).

**502. Heat**

Methods of temperature measurements, specific heats, thermal expansion in solids, in liquids and in gases, conduction, radiation, kinetic theory of gases, change of state, low and high temperature measurements. Prerequisite: Physics 323. Credit 5(2-6).

**503. Physical and Geometric Optics**

A study of the physical properties of light, velocity, wave properties color, optical instruments. Prerequisite: Physics 323. Credit 5(2-6).

**505. Modern Physics**

A course dealing with the significant advances of physics since 1900. Includes atomic structure, elementary quantum theory. Prerequisite: Physics 333. Credit 5(5-0).

**507. Electrodynamics**

Mathematical theory of electromagnetic fields. Prerequisites: Differential Equations, Physics 331, Math. 323. Credit 5(5-0).

**508. Electrodynamics**

Maxwell's equations, general theorems of electrodynamics, electromagnetic waves. Prerequisites: Physics 507, Math. 323. Credit 5(5-0).

**555. History of Physics**

Historical development of the scientific method. The social and political implications of science and technology. Open to advanced students of all departments. Credit 5(5-0).

**604. Electrical Circuit Theory**

The electric circuit is analyzed and the differential equations are solved under the stipulated conditions. Transient and steady state conditions are evolved for circuits under varying conditions of impressed e.m.f. Prerequisite: Calculus. Credit, 5 hours.

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**DEPARTMENT OF PLANT INDUSTRY**

The Department of Plant Industry offers courses in agricultural engineering, field crops, forestry, fruits and vegetable production, geology, and soils.

Curricula leading to the degree of Bachelor of Science are offered in (1) Agricultural Engineering, (2) Agronomy, (3) Horticulture, and (4) Ornamental Horticulture.

These curricula are designed to provide scientific and technical experiences needed in general farming, extension work, teaching in agricultural high schools and colleges, specialized areas of crop production, business enterprises; and a sound background for graduate work.

Students who wish to elect majors under Plant Industry should follow the Basic Curriculum in Agriculture for the freshman and sophomore years (see page 58). Major programs for the junior and senior year may be worked out in conference with the Head of the Department.

**Curriculum in Agricultural Engineering****Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Engineering 131, 123 .....	3(1-4)	.....	3(1-4)
Physics 312, 313 .....	5(4-2)	5(4-2)	.....
Mathematics 313, 321, 322 .....	5(5-0)	5(5-0)	5(5-0)
Mechanical Engineering 328, 331 .....	2(0-4)	.....	5(5-0)
English 224 .....	.....	3(2-2)	.....
Agricultural Engineering 124 .....	.....	.....	3(0-6)
Electives .....	3( )	5( )	3( )
	<hr/>	<hr/>	<hr/>
	18	18	19

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Agricultural Engineering 132, 141, 503 .....	3(1-4)	3(1-4)	5(1-8)
Agricultural Economics 122, 123 .....	3(3-0)	3(3-0)	.....
Soils 140 .....	3(3-0)	.....	.....
Mechanical Engineering 332, 502, 500 .....	5(5-0)	3(0-6)	5(3 4)
Agricultural Engineering 142 .....	.....	3(2-2)	.....
Rural Sociology 131 .....	.....	.....	3(3-0)
Rural Sociology 502 .....	.....	.....	3(3-0)
Electives .....	3( )	5( )	3( )
	<hr/>	<hr/>	<hr/>
	17	17	19

**AGRICULTURAL ENGINEERING****111. Agricultural Drawing**

Lettering, use of instruments, multi-view projection drawing, auxiliary projection, selectional views and dimensioning. Credit 3(0-6).

**122. Farm Shop**

Proper use of tools, woodwork, bench and vise work, pipe fitting and concrete work. Credit 3(1-4).

**123. Field Machinery**

Principles, operation, adjustment, and maintenance of farm field machinery. Credit 3(1-4).

**124. Farm Buildings**

Fundamentals of building construction applied to location, selection of materials, foundations and planning. Prerequisite: Ag. Eng. 111. Credit 3(0-6).

**131. Surveying and Drainage**

Principles of surveying and drainage, planning of soil erosion and drainage systems, based on topographical and soil requirements. Prerequisite: Soils 123, and Math. 311, 312. Credit 3(1-4).

**132. Farm Power**

Principles of mechanical power, use, care and adjustment of internal combustion engines and electric motors. Prerequisite: Phy. 311. Credit 3(1-4).

**141. Rural Electrification**

A study of electricity, electrical wiring, and electrical devices, including motors, with particular emphasis upon the relation of these to the home and the farm. Prerequisite: Physics 311, 312. Credit 3(1-4).

**142. Water Supply and Sanitation for the Farm and Home**

The planning and installation of farm water and sanitation systems. Prerequisite: Ag. Eng. 122, Bact. 123. Credit 3(2-2).

**Advanced Undergraduates and Graduates****500. Terracing and Drainage**

Improvement of soil by use of engineering structures, practice in construction of terraces and drainage systems. Prerequisite: Ag. Eng. 131. Credit 5(3-4).

**501. Farm Shop Organization and Management**

A course designed for prospective and in-service teachers of vocational agriculture. Includes presentation of purpose, plans, and equipment of shops, organization of course of study, and methods of teaching. Prerequisite: Ag. Eng. 122, Ag. Ed. 143. Credit 3(3-0).

**502. Advanced Farm Shop**

Care, operation, and maintenance of farm shop power equipment. Prerequisite: Ag. Eng. 122. Credit 3(0-6).

**503. Special Problems in Agricultural Engineering**

Special work in agricultural engineering on problems of special interest to the student. Credit 1-5 hours.

**CURRICULUM IN AGRONOMY****Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Field Crops 131, 124 .....	3(2-2)	.....	3(2-2)
Agricultural Engineering 123, 132, 124 ....	3(1-4)	3(1-4)	3(0-6)
Agronomy 501 .....	3(3-0)	.....	.....
Agricultural Economics 122, 123 .....	3(3-0)	3(3-0)	.....

Agronomy 141 .....	3 (1-4)	.....	.....
Bacteriology 123 .....	.....	5 (3-4)	.....
Soils 132 .....	.....	3 (3-0)	.....
Botany 112 .....	.....	.....	5 (3-4)
Zoology 142 .....	.....	.....	3 (3-0)
Electives .....	3 ( )	3 ( )	3 ( )
	18	17	17

### Senior Year

Course and No.	Fall	Winter	Spring
Botany 121, 131, 133 .....	3 (2-2)	4 (2-4)	3 (2-2)
Bacteriology 145 .....	4 (2-4)	.....	.....
Agricultural Engineering 131 .....	.....	.....	3 (1-4)
Animal Husbandry 132 .....	.....	5 (3-4)	.....
Rural Sociology 131 .....	.....	3 (3-0)	.....
Agronomy 503-I, 503-II .....	.....	3 ( )	3 ( )
Political Science 231 .....	5 (5-0)	.....	.....
Field Crops 502 .....	.....	.....	3 (2-2)
Soils 140 .....	3 (3-0)	.....	.....
Zoology 133 .....	.....	.....	3 (2-2)
Electives .....	3 ( )	3 ( )	3 ( )
	18	18	18

### Suggested Electives

Agricultural Economics 141 (Farm Records) .....	3 hours
Soils 134 (Soils and Fertilizers) .....	4 hours

### FIELD CROPS (Agronomy)

#### 111. General Farm Crops

History, classification, distribution, culture and utilization of the important field crops. Identification of crops, crop seed, and farm weed seeds. Credit 3(2-2).

#### 121. Principles of Crop Production

Factors affecting crop yields with emphasis on choice of crops and varieties, soil fertility and fertilizers, tillage and harvesting methods and crop rotation. Credit 3(2-2).

#### 124. Forage Crops

Grasses, legumes and other plants and their uses as hay, pasture, silage and special purpose forage; identification of plants and seed and study of quality in hay, silage and pasture population. Credit 3(2-2).

**131. Hay and Pasture Crops**

Major problems connected with meadow and pasture establishment and management. Credit 3(2-2).

**141. Determining Crop Quality**

The recognition of high quality crop products as influenced by growth and maturity factors, weeds and diseases; determination of commercial quality through study of use and grades; identification of crops, weeds and diseases found in the U. S.; planning crop exhibits. Credit 3(1-4).

**Advanced Undergraduates and Graduates****501. Crop Ecology**

The physical environment and its influence on crops; geographical distribution of crops. Credit 3(3-0).

**502. Breeding of Crop Plants**

Significance of crop improvement in the maintenance of crop yields; application of genetic principles to techniques used in improvement of crops; the place of seed certification in the maintenance of varietal purity and production of quality seed. Credit 3(2-2).

**503. Special Problems in Agronomy**

Designed for students who desire to work out special problems in crop production. Credit 2 to 6 hours.

**FORESTRY****131. Introduction to Forestry**

The importance of forest and forestry to national and local economies; special attention given to conditions in southeastern United States. Survey of the various fields of forestry. Field trips will be devoted to identification of important forest trees of the Southeast. Credit 3(2-2).

**132. Forest Utilization**

Theory and use of instruments in determining the volume of logs, trees, and stands. Problems in marketing and utilizing the products of the forest. Emphasis on marketing products of farm woodlands of the Southeast. Credit 3(2-2).

**133. Farm Forestry**

Principles of farm woodland management, including measurement of logs, trees, and stands; planting and harvesting methods; basic silvicultural principles; improvement cuttings. Forestry 131 and 132 recommended. Credit 3(2-2).

## HORTICULTURE

### Fruits and Vegetable Production (Horticulture)

#### 111. General Horticulture

This course is designed to acquaint students with the various divisions in horticulture such as floriculture, ornamental horticulture, landscaping, olericulture and pomology. Credit 3(3-0).

#### 122. Fruit Production

Planting, propagating and caring for orchards as they are applied to North Carolina conditions. Credit 3(2-2).

#### 131. Plant Propagation

The propagation of plants by seed, cuttings, budding and grafting. Prerequisite: Botany 111. Credit 3(2-2).

#### 133. Vegetable Production

Commercial vegetable production with special emphasis on large scale production, harvesting and marketing of vegetables. Credit 4(2-4).

#### 134. Small Fruits

The culture of strawberries, grapes, raspberries, blackberries and other small fruit. Field trips, mostly within the state. Credit 3(2-2).

#### 135. Disease and Insect Control

Emphasis is placed on the preparation and use of the latest spray machines, equipment and materials in controlling insects and diseases of the orchard and garden. Credit 3(1-4).

#### 141. Harvesting and Marketing of Fruits and Vegetables

Problems involving time of harvesting, packaging, packing and marketing of fruits and vegetables. Credit 4(2-4).

#### 142. Plant Propagation and Nursery Practice

Methods used in the commercial propagation of fruits and ornamental shrubs with emphasis on grafting, budding and cutting. Nursery culture methods and practices. Credit 3(1-4).

## Advanced Undergraduates and Graduates

### 501. Special Problems in Fruits and Vegetables

Work along special lines given largely by the project method for advanced undergraduate students who have the necessary preparation. Credit 2 to 5 hours.

## GEOLOGY

#### 111. Physical Geology

Relation of geologic principles in the development of a balanced concept of the earth and earth history; identification of rocks and minerals; weathering, water and mineral resources; sediments, metamorphosis and volcanism; land forms. Credit 4(3-2).

**ORNAMENTAL HORTICULTURE****112. Amateur Floriculture**

General principles of growing flowers on a small scale in the greenhouse and outside. The potting of plants and planning the small border flower bed. Credit 3(2-2).

**122. Greenhouse Construction and Management**

Types of greenhouses and their structural detail with regard to watering, heating, ventilation and lighting. Environmental control for various types of plants. Credit 4(2-4).

**131. Commercial Flower Production**

Culture and marketing of cut flowers. Credit 4(2-4).

**132. Commercial Flower Production**

Culture and marketing of pot and conservatory plants. Credit 4(2-4).

**133. Principles of Landscape Planning**

An introduction to the fundamentals of landscape design with particular emphasis upon planning of small home properties. Prerequisite: Agricultural Engineering 111. Credit 4(2-4).

**134. Plant Materials**

The merits, adaptability and identification of ornamental trees and shrubs used in landscape planting. Credit 4(2-4).

**140. Arboriculture**

Principles of landscape maintenance with reference to tree surgery and pruning. Emphasis will be placed on preventive measures for control of insects and diseases of trees. Moving and planting of large shrubs and trees. Credit 4(2-4).

**142. Flower Shop Management**

Floral designing and flower shop operation. Credit 3(1-4).

**144. Landscape Planning and Planting of Small Properties**

Emphasis will be placed on designing landscaping home and school grounds. Credit 4(2-4).

**145. Landscape Designing**

Practice in model landscape construction. Credit 3(0-6).

**Advanced Undergraduates and Graduates****501. Advanced Horticulture**

Laboratory practice with methods and techniques used in horticultural research. Credit (1-4).

**CURRICULUM IN SOILS****Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Mathematics 313, 321, 322 .....	5(5-0)	5(5-0)	5(5-0)
Physics 321, 322, 323 .....	5(3-4)	5(3-4)	5(3-4)
Chemistry 121, 122 .....	4(2-6)	4(2-6)	.....
Bacteriology 123 .....	.....	.....	5(3-4)
Electives .....	3( )	3( )	3( )
	<hr/>	<hr/>	<hr/>
	17	17	18

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Field Crops 131, 501 .....	3(2-2)	3(3-0)	.....
Chemistry 141, 131 .....	5(3-6)	.....	5(3-4)
Soils 140, 132, 142 .....	3(3-0)	3(3-0)	3(2-2)
Botany 121 .....	3(2-2)	.....	.....
Biochemistry 135 .....	.....	5(2-6)	.....
Soils 134, 504 .....	.....	4(2-4)	2( )
Political Science 231 .....	.....	.....	5(5-0)
Electives .....	3( )	3( )	3( )
	<hr/>	<hr/>	<hr/>
	17	18	18

**123. Soils**

The general nature and properties of soils with introductory treatment of soils genesis, morphology and classification. Credit 4(2-4).

**132. Soil Fertility**

General principles of soil fertility; the physical chemical and biological factors affecting soil fertility and crop production. Credit 3(3-0).

**134. Soils and Fertilizers**

Analytical and theoretical analysis of soils and fertilizers. Application of physics, chemistry and microbiology to the study of soil-plant interrelationships. Credit 4(2-4).

**140. Soil and Water Conservation**

Social and economic aspects of soil deterioration and water conservation. Principles of land improvement as applied especially to humid regions. Credit 3(3-0).

**142. Soil Genesis and Classification**

Soil genesis, morphology and classification of the major soil groups of the United States in relation to soil management. Study of soil maps and soil survey reports. Credit 3(2-2).

**Graduates and Advanced Undergraduates****504. Special Problems in Soils**

Research problems in soils for advanced students majoring in agronomy. Credit 2 to 8 hours.

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**RESEARCH****246. Senior Research**

An introduction to methods of gathering, recording, and interpreting information. Open only to seniors in the School of Education and Sciences. Each student will either complete a long scholarly paper, which in certain cases will constitute a thesis, or contribute to the completion of a project requiring the work of two or more students. Given each quarter. Credit 3(3-0).

For graduate research in specific fields, Graduate Thesis, page 70.

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**RESERVE OFFICERS TRAINING****ROTC FACILITIES**

The Headquarters of the Infantry and Air Force ROTC units are located in building T-1200 on North Campus. This building was formerly the administration building of the military hospital, of the local Army Overseas Replacement Depot. The Infantry Headquarters is located in the east wing of the building, while the Air Force Headquarters is located in the west wing. Also located in this building are a Reproduction Room, ROTC Library and two Classrooms. The Reproduction Room and the Library are used jointly by the two services, while the classrooms are used by the Air Force exclusively.

Other facilities used by the ROTC are classrooms in buildings T-1294, T-1244, T-1243, Supply Room, T-1250, Rifle Range T-1273 and the garage T-1219. All of these facilities except classroom T-1244 are used jointly by the services. The facilities are located on north campus. Available to both the Infantry and Air Force for drill purposes is the athletic field, located in the main campus. Presently under construction on North Campus, facing the ROTC Headquarters, is a Drill Field, to be used jointly by the services upon completion.

**AIR SCIENCE AND TACTICS****First Year Basic. Air Science 211, 212, 213****Introduction to AFROTC** 4 Clock hrs.

This block of instruction describes the AF ROTC program, orient the cadet into the program and explains the obligations for a significance of service in the Armed Forces.

**Introduction to Aviation** 16 Clock hrs.

A history of the development of aviation, a description of classes and types of aircraft, parts of an airplane and the basic principles of flight.

**Fundamentals of Global Geography** 10 Clock hrs.

The evaluation of geographical knowledge, map projections, major geographic regions of the earth, the geography of weather, geographical basic of power and military aspects of global geography.

**International Tensions and Security Structures** 15 clock hrs.

Factors that contribute to the status of a nation as a world power; forces that develop tensions between world powers, the world military situation, international security structures that have been established to deal with the problem of security, and the role of the United States in world leadership.

**Instruments of National Military Security** 15 Clock hrs.

The first six hours deal with the Armed Forces: historical development, mission, weapons and joint operations. The final nine hours are devoted to military aviation: the place of air power in modern war, characteristics and capabilities of military aviation, the future of military aviation in the United States.

**Drill—Basic Military Training** 30 Clock hrs.

This instruction continues through the entire year and includes wearing the uniform, military courtesy, element and mass drill, and other leadership exercises. Credits 2(2-2).

**Second Year Basic, Air Science 221, 222, 223****Introduction** 1 Clock hr.

A general review of subjects covered in freshman year and a preview of sophomore year subjects.

**Elements of Aerial Warfare** 52 Clock hrs.

This block covers targets, weapons, delivery aircraft, the air ocean, bases and forces.

The study of targets includes definition and types of military targets, and intelligence procedures related to targets; i.e., cycle pattern of intelligence activities, aerial photographs, target systems, and selection.

The study of weapons includes definition and types of aerial weapons including conventional high-explosive, atomic, rocket-propelled, chemical, biological, and psychological.

The study of delivery aircraft deals with factors governing design and types of delivery aircraft.

The study of the air ocean deals with the significance of the air as a medium for delivery of weapons and problems associated with delivering weapons through the air ocean. These problems include target reconnaissance, protection against enemy defenses, problems peculiar to delivery of weapons versus joint military operations targets, and problems associated with delivery of weapons in aerial defense of the homeland.

The study of air bases deals with the air base as a platform for the delivery of weapons, types of air bases, factors relating to the location and size of air bases, problems associated with isolated and extreme climate base locations, and engineering aspects in construction and maintenance of air bases.

The study of forces covers USAF combat and support organizations and the role and responsibility of each officer and airman in accomplishing the Air Force mission.

**Careers in the USAF**

7 Clock hrs.

Purpose and operation of the USAF Officer Career Program, a description of career fields, and personal and professional advantages offered by a career in the USAF. A brief coverage of Air Force careers for airmen is also included.

**Leadership Laboratory—Cadet Non-Commissioned Officer Training**

30 Clock hrs.

A continuation of the subjects covered in Air Science I Military Training: wearing the uniform, military courtesy, element and mass drill, other leadership exercises. Students gain experience in leading a small cadet unit. Course continues through entire year. Credit 2(2-2).

**First Year Advanced Course. Air Science III 231, 232, 233****Introduction to Advanced AFROTC**

2 Clock hrs.

**The Air Force Commander and His Staff**

8 Clock hrs.

Responsibilities and functions of the Air Force Commander, organization of Military staffs, and principles of effective staff work.

**Problem Solving Techniques**

10 Clock hrs.

A study of the laws of learning, the nature of thinking and problem solving, a series of steps to be considered in problem solving, and conference techniques in the solution of problems.

<b>The Communications Process and Air Force Correspondence</b>	<b>25 Clock hrs.</b>
Nature of the communication process, communication media within the Air Force emphasis on the types of military correspondence, general semantics, learning as a communicative process, and teaching methods.	
<b>Military Law, Courts and Boards</b>	<b>15 Clock hrs.</b>
Crimes and offenses, types of courts martial; pre-trial, trial and post trial procedures; and board procedures.	
<b>Applied Air Science</b>	<b>50 Clock hrs.</b>
Aerodynamics and propulsion; aircraft engines; aerial navigation; and weather, including teletype weather reports, maps and charts.	
<b>Air Force Base Functions</b>	<b>10 Clock hrs.</b>
The typical air base organization, its functions and functions of the various base officers.	
<b>Leadership Laboratory</b>	<b>30 Clock hrs.</b>
This is scheduled through the entire year and continues training in wearing the uniform, military courtesy, units and mass drill, and other leadership activities for cadet, flight squadron, and group officers. Credit 3(4-2).	
 <b>Second Year Advance Course. Air Science IV 241, 242, 243</b>	
<b>Critique of Summer Camp and Introduction to Air Science IV</b>	<b>2 Clock hrs.</b>
<b>Leadership Seminar</b>	<b>38 Clock hrs.</b>
Leadership concepts and responsibilities; functions and leadership at different echelons of command; management and human relations aspects of leadership.	
<b>Career Guidance</b>	<b>5 Clock hrs.</b>
Review and current status of occupational fields open to officers; procedures of officer classification; opportunities and application procedures for active duty; specialized training; graduate study; and regular or reserve commissions in the Air Force.	
<b>Military Aspects of World Political Geography</b>	<b>45 Clock hrs.</b>
The framework of international politics, the anatomy of political power, geographical basis of power, world military political factors of geography, world powers and strategic areas, changing patterns of power in world politics, and world security problems in relation to international power clashes.	

**Military Aviation and the Art of War** 20 Clock hrs.  
 Principles of war, historical examples of basic land warfare combat maneuvers, historical survey of naval warfare, historical survey of air warfare, and modern warfare with emphasis on military aviation.

**Briefing for Commissioned Service** 10 Clock hrs.  
 How to prepare and report for the first assignment, attitudes and activities of primary concern to a newly commissioned officer on his first assignment and the long range reserve plan.

**Leadership Laboratory** 30 Clock hrs.  
 A continuation of military training offered in the first three years, plus instruction of subordinates, duties of Officer of the Day and Officer of the Guard, planning and supervising drill and other cadet corps activities. Credit 3(4-2) each week.

### AF ROTC COURSE OF STUDY

#### BY QUARTERS

#### BASIC COURSE

#### AIR SCIENCE I

<i>Fall Quarter</i>	<i>Clock Hours</i>
Introduction to AF ROTC .....	4
Introduction to Aviation .....	16
Drill .....	10

<i>Winter Quarter</i>	<i>Clock Hours</i>
Fundamentals of Global Geog. ....	10
International Tensions and Security Organizations .....	10
Drill .....	10

<i>Spring Quarter</i>	<i>Clock Hours</i>
Instruments of National Military Security .....	20
Drill .....	10

#### AIR SCIENCE II

<i>Fall Quarter</i>	<i>Clock Hours</i>
Elementary of Aer. War I:	
Introduction .....	2
Targets .....	5
Weapons .....	13
Leadership Lab. ....	10

<i>Winter Quarter</i>	<i>Clock Hours</i>
Elementary of Aer. War II:	
Delivery Aircraft .....	7
The Air Medium .....	13
Leadership Lab. ....	10

<i>Spring Quarter</i>	<i>Clock Hours</i>
Elementary of Aer. War III:	
Bases .....	5
Forces .....	8
Careers in A. F. ....	7
Leadership Lab. ....	10

**AIR SCIENCE III**

<i>Fall Quarter</i>	<i>Clock Hours</i>
Int. to Adv. AF ROTC .....	2
AF Comdr. and Staff .....	8
Problem Solving .....	10
Comm. Processes .....	20
Leadership Lab. ....	10

<i>Winter Quarter</i>	<i>Clock Hours</i>
Military Law .....	15
Applied Air Science .....	1
Aerodn and Prop. ....	25
Leadership Lab. ....	10

<i>Spring Quarter</i>	<i>Clock Hours</i>
Applied Air Science II:	
Navigation .....	15
Weather .....	15
Base Functions .....	10
Leadership Lab. ....	10

**AIR SCIENCE IV**

<i>Fall Quarter</i>	<i>Clock Hours</i>
Critique of Summer Camp .....	2
Leadership Seminar .....	38
Leadership Lab. ....	10

<i>Winter Quarter</i>	<i>Clock Hours</i>
Military Aspects of World Political Geography .....	40
Leadership Lab. ....	10

<i>Spring Quarter</i>	<i>Clock Hours</i>
Career Guidance .....	5
Military Aviation and Art of War .....	25
Briefing for Comm. Service .....	10
Leadership Lab. ....	10

**CONTACT HOURS**

Basic Course including Drill and Laboratory .....	3 hours per week
Advanced Course including Laboratory .....	5 hours per week

**MILITARY SCIENCE AND TACTICS****Section I—General**

A Senior (CC) Civilian College type of unit Reserve Officers' Training Corps is organized at this Institution under authority of amended Sections 40-47c of the National Defense Act.

The mission of the Senior ROTC is to produce Officers who have the qualities and attributes essential to their progressive and continued development in the Army of the United States, and to lay foundations for intelligent citizenship.

Two years of military science and tactics are required of all physically qualified male students in their Freshman and Sophomore years, subject to conditions outlined in Section II.

The Senior ROTC program consists of two parts: (1) Basic course and (2) Advanced course which includes a 6 weeks summer camp period. The Basic course will consist of formal instruction for a minimum of 3 hours per week for 2 academic years. The Advanced course will consist of formal instruction for a minimum of 5 hours per week for 2 academic years.

**Section II—Conditions for Enrollment in ROTC****1. General Conditions**

- (1) Be a citizen of the United States and not less than 14 years of age.
- (2) Physically qualified under standards prescribed by Department of the Army.
- (3) Accepted by the college as a regularly enrolled student of Institution.
- (4) Successfully complete such general survey or screening test as may be prescribed.

**2. Conditions for Enrollment in Basic Course**

- (1) All general conditions listed in 1 above.
- (2) Not have reached 23 years of age at time of initial enrollment.
- (3) Must have at least 2 academic years remaining in their course at this Institution.
- (4) Sign a deferment agreement which in part, states as follows: "I hereby agree to complete the basic course, if enrolled therein; to enroll in and complete the advanced course at the proper time, if accepted therefor."

Students who fail to fulfill the terms of their ROTC deferment agreements pertaining to undergraduate work at this institution will be immediately suspended.

**3. Conditions for Enrollment in the Advanced Course**

- (1) All general conditions listed in 1 above.
- (2) Not have passed 26 years of age at time of initial enrollment.
- (3) Be selected by the Professor of Military Science and Tactics and the President of the Institution.
- (4) Have completed the basic course Senior ROTC, or received credit in lieu thereof on basis of prior service in the Armed Services.
- (5) Execute a written agreement with the Government, (Contract), to complete course of instruction, attend a 6 weeks' period of summer camp, and to accept a commission if offered. The contract will expire if the student's attendance at school is interrupted for more than two calendar years.
- (6) Maintain satisfactory scholastic standing required by College in academic and ROTC work.

**Section III—Military Science****COURSE OF INSTRUCTION**

Training in Military Leadership is emphasized with instruction being given in subjects common to All Branches.

**M.S. 211, 212, 213. First Year Basic Course**

Military Organization; Military Policy of the U. S.; National Defense Act and ROTC, Evolution of Warfare; Individual Weapons and Marksmanship; Maps and Aerial Photos; First Aid and Hygiene; Military Problems of the United States; Military Mobilization and Demobilization; Leadership, Drill and Exercise of Command: 211 Fall; 212 Winter; 213 Spring. Credit 2(2-2) Each Quarter.

**M.S. 221, 222, 223. Second Year Basic Course**

Military Organization; Weapons, Marksmanship, Technique of Fire of the Rifle Squad, Combat Formations, Scouting and Patrolling, Tactics of Rifle Squad, Leadership, Drill and Exercise of Command. 221 Fall; 222 Winter; 223 Spring. Credit 2(2-2) Each Quarter.

**M.S. 231, 232, 233. First Year Advanced Course**

Military Organization, Weapons, Gunnery, Communications, Combat Intelligence, Estimate of the Situation and Combat Orders, Field Fortifications, Tactics of the Rifle and Heavy Weapons Platoons and Companies, Leadership, Drill and Exercise of Command. 231 Fall, 232 Winter; 233 Spring. Credit 5(4-2) Each Quarter.

**M.S. 241, 242, 243. Second Year Advanced Course**

Military Organization, Command and Staff, Communications, Motors and Transportation, Supply and Evacuation, Troop Movements, New Developments, The Military Team, Tactics—The Infantry Battalion in

Attack and Defense, Military Administration, Military Law and Boards, Geographical Foundations of National Power, Military Teaching Methods, Psychological Warfare, Leadership, Drill and Exercise of Command. 241 Fall; 242 Winter; 243 Spring. Credit 5(4-2) Each Quarter.

The program and/or courses are subject to change by the Department of the Army directives.

#### Section IV—Uniforms and Equipment

All regularly enrolled members of this Senior ROTC are furnished by the Government free of cost, uniforms, equipment and text books. A deposit of ten dollars (\$10.00) is required of all students at time of registration to cover uniforms issued to them and this fee will be refunded when uniforms are returned. The student is responsible for the care, safeguarding, and cleaning of property issued to him. He is financially responsible for the loss, excessive wear, breakage due to carelessness or unauthorized use of clothing and equipment. Each student is required to have a certificate countersigned by his parents or guardian to insure that the Government is reimbursed in case the above regulations are violated. All ROTC property must be returned to the Military Property Custodian at end of school year or when a student withdraws from school, except as indicated below:

- a. Maintenance, repair, and replacement of shoes, low quarter, tan, and socks, cotton, tan, will be at the expense of the student while in his possession.
- b. Students completing basic or advance courses are not required to turn in shoes and socks issued for the course.
- c. Students failing to complete the basic or advance course must turn in the shoes and socks furnished for the course.

#### Credit for Previous Military Service or Training

For previous honorable military service or training in Army, Navy, Marine Corps or Coast Guard of the U. S. credit may be allowed, subject to approval of the President and the PMS&T, within the following limits:

- (1) For 12 months or more service credit not to exceed the entire basic course of the Senior ROTC.
- (2) For six months or more service credit not to exceed the first year of the basic course.

For additional information contact ROTC Headquarters located on the campus.

## DEPARTMENT OF SOCIAL SCIENCE

In keeping with the general objectives of the College, the offerings of this department are designed to provide students with a cultural and humanistic preparation in the social sciences; to insure students a proper groundwork on which to build advanced technical and professional courses, and to stimulate those qualities and characteristics from which come intellectual vigor, broad human sympathy and constructive imagination.

### THE SOCIAL SCIENCES

The social sciences at the Agricultural and Technical College of North Carolina include economics, geography, history, political science, and sociology.

### A MAJOR IN THE SOCIAL SCIENCES

Students who wish to major in the social sciences or a particular social science, may do so by selecting any one of two curricula: (1) Social Studies, or (2) Applied Sociology.

The *Social Studies* curriculum is specifically designed to prepare students for the teaching of history and/or any combination of the social sciences listed above, in junior and senior high schools.

The *Applied Sociology* curriculum is geared to meet the needs of students who are interested in social welfare, labor relations, government service, personnel administration, industrial relations, public relations and kindred vocations.

### COMPREHENSIVE EXAMINATION

A social science major must pass a comprehensive examination in the social sciences before he will be recommended for graduation by the department.

Examinations are designed to demonstrate a student's ability to correlate the subject matter of the social sciences and to apply it in practical situations.

The examination is given once each school quarter by the Department of Social Science.

Sample programs for social science majors are shown below.

### MAJOR IN HISTORY\*

This major is designed especially for those desiring to pursue further study in the field of history.

\*History 210, 213, and 222 which are required of all students during Freshman and Sophomore years must be included in the History Major. A minimum of 45 quarter hours in history is required for the History Major. In addition a total of 19 quarter hours in political science, sociology, economics or geography is required. It is suggested that students majoring in history take the majority of their electives in the social science and English field.

**Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
History 211, 212, 221 .....	3 (3-0)	3 (3-0)	3 (3-0)
History 223, 231 or 232, 233 .....	3 (3-0)	5 (5-0)	3 (3-0)
Sociology 231 .....	5 (5-0)	.....	.....
Minor or electives .....	3 hrs.	10 hrs.	12 hrs.
	18	18	18

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
History 226 .....	3 (3-0)	.....	.....
History 235, 237, 238 .....	3 (3-0)	3 (3-0)	3 (3-0)
Economics 236 .....	3 (3-0)	.....	.....
Sociology 242 .....	.....	.....	3 (3-0)
Political Science 232 or 231 .....	.....	5 (5-0)	.....
Geography 244 .....	3 (3-0)	.....	.....
Minor or electives .....	6 hrs.	6 hrs.	12 hrs.
	18	17	18

**MAJOR IN APPLIED SOCIOLOGY\*****Junior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Economics 231, 232, 234 .....	5 (5-0)	5 (5-0)	5 (5-0)
Sociology 231, 232, 233 or 131 .....	5 (5-0)	5 (5-0)	3 (3-0)
Sociology 234, 235, 240 .....	3 (3-0)	3 (3-0)	5 (5-0)
Psychology 221, 226 .....	.....	5 (5-0)	5 (5-0)
Political Science 231 .....	5 (5-0)	.....	.....
Minor or Electives .....	.....	.....	.....
	18	18	18

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Economics 236, 246 or 501, 502 .....	3 (3-0)	3 (3-0)	3 (3-0)
Sociology 253; Mathematics 318 .....	3 (3-0)	5 (5-0)	.....
Sociology 241, 242, 245 .....	3 (3-0)	3 (3-0)	5 (5-0)
Political Science 232 .....	.....	5 (5-0)	.....
Minor or Electives .....	9 hrs.	3 hrs.	10 hrs.
	18	19	18

\*Students expecting to major in Applied Sociology should take the required courses listed by the School of Education and Science. There are no additional subjects required for the major other than those listed in the above curriculum.

Note: It is advised that students majoring in Applied Sociology choose minor in a closely related field. The social science minor requires a minimum of 38 quarter hours. This would include 18 to 20 hours of history and 20 hours from economics, sociology, geography and political science. The 15 hours of history required of Freshmen and Sophomores may be included in the history minor. Suggested courses for the social science minor are: History 210, 213, 222 and 221 or 232, Economics 231, Sociology 231, Geography 240, and Political Science 231 or 232.

**Suggested Electives**

Sociology 502, 503, 506	Home Economics 113, 122
Economics 233	Education 223, 225, 231, 233
Geography 241, 242, 244	Religion 211, 212, 213
History 237, 246	Philosophy 222, 223

**MAJOR IN SOCIAL STUDIES**

This major is designed especially for persons planning to teach in the secondary schools.

<b>Junior Year</b>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
<i>Course and No.</i>			
Hist. 231, 232 Ancient and Medieval History .....		5(5-0)	5(5-0)
Ec. 231, 232 Economics .....	5(5-0)	5(5-0)	.....
or			
Hist. 211, 212 .....	3(3-0)	3(3-0)	.....
231, 232, 242 Sociology .....	5(5-0)	5(5-0)	3(3-0)
Minor or Electives .....	5(5-0)	.....	8(8-0)

**Senior Year**

<i>Course and No.</i>	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Geo. 240 Principles of Geography .....		5(5-0)	.....
Geo. 241 Commercial Geography .....		.....	5(5-0)
Hist. 233 Latin American History .....		.....	3(3-0)
Pol. Sc. 231 Federal Government .....	5(5-0)	.....	.....
Po. Sc. 232 State Government .....		5(5-0)	.....
Minor or Electives .....	10(10-0)	5-(5-0)	5(5-0)

**COURSES IN HISTORY****210. History of Civilization**

A general course surveying the main trends in history of western civilization and showing the development of ancient civilization and the subsequent expansion of medieval and modern Europe. Credit 5(5-0).

**211. Modern Europe**

A survey course dealing with major factors and movements in the history of modern Europe. It deals with economic, social, political, religious, and intellectual problems in their relationship to the development of national states, growth of democracy and the expansion of Europe from 1500 to 1815. Lectures, collateral reading, special reports and map work. Credit 3(3-0).

**212. Modern Europe**

A survey of the history and development of Europe from 1815 to the present. Credit 3(3-0).

**213. History of the Negro**

This course begins with a brief survey of the African background of the Negro and traces him from Africa to America. It includes a study of his enslavement, with special emphasis on slavery in America, the Free Negro before 1860, abolition, and the Civil War with special emphasis on the part played by Negro troops, achievements since 1865, and forces in Negro progress. Credit 5(5-0).

**221. American History**

The economic, political and social development of the colonies and of the United States up to the Civil War. Attention is given to the early American settlers. Credit 5(5-0).

**222. United States History**

An intensive study of the political, social and economic history of the United States from the reconstruction period to World War I. Credit 5(5-0).

**223. History of Reconstruction**

An intensive study of the social, political and economic conditions of the United States during the years 1865 to 1895. Prerequisite: 15 hours of history. Winter. Credit 3(3-0).

**226. History of England**

A survey of the social and political development of England in the 16th, 17th, and 18 centuries. Credit 5(5-0).

**231. Ancient History**

This course is designed for those majoring in the field or who plan to teach history in secondary schools. It includes a study of the civilization and contributions of the people of the Orient, along the Nile, and of Greece and Rome. Prerequisite: 15 hours of history. Fall. Credit 5(5-0).

**232. Mediaeval History**

A history of Europe in the middle ages with particular attention to social and economic conditions and cultural and religious development. Prerequisite: 15 hours of history. Winter. Credit 5(5-0).

**233. History of Latin America**

A study of the rise and development of the Latin-American nations, with special attention to their relations with each other and with the outside world. Prerequisite: 15 hours of history or consent of instructor. Spring. Credit 3(3-0).

**234. Contemporary American History**

Analysis of important problems in American history since World War I, with emphasis on the domestic and foreign policy. Credit 3(3-0).

**235. History of Eastern Europe**

A general course in the history of Eastern Europe, the Balkans and Russia from the period of the Romanoffs to the present. Credit 3(3-0).

**237. American Constitutional History**

A study of the constitutional development of the United States from 1789 to the present time. Major Supreme Court decisions affecting constitutional changes will be given special attention. Credit 3(3-0).

**238. History of North Carolina**

A general survey of North Carolina from colonial times to the present. Credit 3(3-0).

**246. History of the Far East**

A survey of the economic and political development of the far eastern countries with emphasis on the twentieth century. Prerequisite 15 hours of history. Credit 3(3-0).

## POLITICAL SCIENCE

**231. Federal Government**

A general introductory course in the government of the United States designed to acquaint the student with the more important facts of the organization and working of Federal institutions and to give a foundation for more advanced work in government. Discussed are principles of political science, the state, the nation, the government, constitution, the federal executive, cabinet, and courts. Prerequisite: 15 hours of Social Science or consent of instructor. Fall. Credit 5(5-0).

**232. State and Local Government**

A study of state constitutions and of the structure and functions of state and local government in the United States. Prerequisite: 15 hours of Social Science or consent of instructor. Winter. Credit 5(5-0).

**233. Introduction to American Government**

This course is designed to acquaint the student with the organization and administration of federal, state and local government. It is intended especially for non-Social Science majors interested in understanding how government operates. Fall or Winter. Credit 3(3-0).

## GEOGRAPHY

**240. Principles of Geography**

This course is a survey of the principles of geography. The earth, air, sea, and land are studied with particular emphasis upon the physiographic features of North America. Credit 5(5-0).

**241. Economic Geography**

This course deals with natural environment and natural resources in relation to the various economic areas of the world with particular

emphasis on the development of the United States. This is followed by a regional approach in relation to economic activities. Credit 5(5-0).

#### **242. Resources and Industries of United States**

A study of the physical resources of the United States and its possessions with emphasis on the utilization and conservation of power, labor, minerals and soils. Credit 3(3-0).

#### **243. Economic Geography of Latin America**

This course deals with the agricultural and industrial resources of Latin America with special emphasis on such countries as Brazil, Argentina, Mexico and Cuba, the utilization of Negro labor, and the assimilation of African culture into Latin-American life. Credit 3(3-0).

#### **244. Political Geography**

Theories of political geography. Territorial changes and their political significance. Problems in political unification, centralization and federation. Relations between constituent parts of Empire Commonwealth. Credit 3(3-0).

### **SOCIOLOGY**

#### **231. Principles of Sociology**

Principles and laws of sociology; the literature in which they are discussed, and the key concepts about which they center. Credit 5(5-0).

#### **232. Social Problems**

An analysis of changing aspects of our social life and the problems created for the individual and society. Special emphasis upon sociological problems and social planning. Credit 5(5-0).

#### **233. Community Organization**

A study of the demographic factors, family life, standards of living, social attitudes and values, and the trends, with their implications toward urbanization. Prerequisite: Sociology 231 or consent of instructor. Credit 3(3-0).

#### **234. Juvenile Delinquency**

A study of crimogenic homes, communities and general conditions conducive to delinquency; the nature of delinquent behavior, viewed according to legal norms and by sociological and administrative standards. Critical analysis of theories and research in the etiology of delinquent behavior. The relationship of cause and treatment is considered. Credit 3(3-0).

#### **235. Criminology**

Causative explanations and the nature of crime and criminal behavior; society's reaction toward criminal and anti-social acts; critical analysis of theories and research in the etiology of criminal behavior, and trends in the treatment and disposition of criminals. Credit 3(3-0).

**236. Culture and Personality**

The nature of culture. The factor of differences in human behavior and personality as related to cultural variability. Comparisons of selected pre-literate and modern groups in respect to social structure, social organization and socialization of children. Lectures, special reports, films, discussion groups. Prerequisites: Sociology 231 and a course in elementary psychology. Credit 3(3-0).

**240. Social Psychology**

Social application of psychology; social stimulation and response; formation of attitudes involved in cooperation-competition, leadership-submission, frustration-aggression, crowd and mob phenomena. Credit 5(5-0).

**241. Marriage and the Family**

A study of marriage problems and family living with special attention being given to items such as personality, courtship, family budgeting, divorce, parenthood. Credit 3(3-0).

**242. Minority Groups in the United States**

An examination of the composition, status, and relations of racial and other minority groups in the United States; trends and policies; analysis of recent research. Credit 3(3-0).

**243. Public Relations**

A study of public relation techniques; mechanics of publicity, the newspaper, research, surveys and measurement; press and personal relations. Credit 3(3-0).

**245. Field Work in Social Administration**

This course is designed to provide practical experience and counseling in the application of principles and techniques in various areas of social administration under the direction of the instructor in cooperation with administrators of selected social agencies in the community. The course will provide two lectures per week, with three hours assigned for practical experience. Credit 5(2-6).

**253. Introduction to Sociological Research**

Delineation of a research problem in Sociology. Survey and uses of available sources of data. Consideration of sampling procedures of Sociology research. Field methods for collecting original data. Graphic presentation of statistical data. General prerequisites must include sociology 231. Credit 3(3-0).

**502. Current Economic and Social Problems**

A practical course in applied economics and sociology dealing with analysis of present trends in government, economics, industry, agriculture, and the social implications of these trends. Current problems of everyday life are emphasized. Prerequisite: 15 hours of social science. Credit 3(3-0).

**503. Research Problems**

Individual problems for research in each student's field of interest—labor, industry, agriculture, unemployment, old age, etc. Prerequisite: 15 hours of social science. Credit 3(1-4).

**506. Population Problems**

Introduction to population study. The development of official population data; principal sources of information; methods of analysis; survey of contemporary population movements.

**ECONOMICS****231. Principles of Economics**

This course surveys the general field of Economics. It considers the nature and scope of Economics, basic economic institutions, and economic characteristics of present society. Credit 5(5-0).

**232. Economic Problems**

This course gives detailed consideration to major areas in modern economic life. The implications of public ownership, monopoly, organized labor and business combinations are stressed as modifications of the ideal competitive economy. Prerequisite: Economics 231 or consent of instructor. Credit 5(5-0).

**233. Money and Banking**

A general survey of the role of banking in the economy. The relationship of the banking system as a business enterprise to its role as the regulator of business activity; the nature of money and international exchange. Credit 5(5-0).

**234. Labor Problems**

An introductory course dealing with the efforts of working people to improve their relative position in the economy. The influences of unionism and of governmental participation are emphasized. Particular attention is directed to the collective bargaining process and to labor legislation. Credit 5(5-0).

**236. Consumer Economics**

This course is designated to show the importance of the consumer in the American economy, especially as a force for economic betterment; necessity for sound budgeting of income and sound spending policies; Consumer problems of Negroes. Credit 3(3-0).

**254. Statistical Methods in Social Science**

An introduction to research methods; social statistics; analysis of methods used by social scientists. Credit 4(2-4).

**245. Seminar in Economics**

An intensive study of significant labor and industrial problems and literature. Lectures, student reports and discussions. Open only to majors and minors in the social sciences. Credit 2(2-0).

**246. Government and Economic Life**

A survey of the rationale and effects of the impact of government in major areas of economic life. Regulation of industry and of labor relations are stressed, with implications of such activities for the traditional economic institutions of America. Prerequisite: Economics 231 or consent of instructor. Credit 3(3-0).

**501. Recent Labor Legislation**

Problems of labor from the standpoint of the state. A survey of existing legislation and procedure for settling disputes. Minimum wage and other legislation are studied in detail. Credit 3(3-0).

**502. Social Security Legislation**

The development of social security programs in America. Particular emphasis is placed upon unemployment insurance, old age benefits and other aspects of the existing program. Attention is given to administrative and social problems encountered. Credit 3(3-0).

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**TECHNICAL INSTITUTE**

S. C. SMITH, *Dean*

The aim of the Technical Institute is to train skilled tradesmen and technicians who will take their places in industry as producers and contributing citizens.

It is designed for those students who desire to prepare themselves to enter industry upon graduation.

The courses offered range from two to three years in length, depending upon the major field of interest.

In addition to training in the manipulative skills, technical, related and general education courses are stressed for all students in the department.

The Technical Courses leading to certificates are: Auto-Mechanics, Carpentry, Cabinet Making and Upholstering, Shoe Repairing and Leather Work, Tailoring, Machine Shop Practice, Masonry, Secretarial Science, Plumbing and Steam Fitting, Welding, Radio and Television Servicing, Electrical Wiring, Laundry and Dry Cleaning.

## **ADDITIONAL VOCATIONAL TRADE COURSES**

The Technical Institute will offer the following courses beginning in September, 1953.

### **PHOTOGRAPHY**

(Men and Women)

Nine (9) Months

#### **Portrait and Commercial Photography**

The objective of this course is to provide the thorough training and practice necessary for success in this field. This is accomplished through actual work assignments with up-to-date equipment.

Professional photography enables those who select it as a career to enjoy the satisfaction of doing creative and artistic work while, at the same time, earning a good livelihood.

**Entrance Requirements**—High school graduation.

**Major Topics:** Theory and practice of photography with view and hand cameras, exterior and interior photography, finishing enlargements, reproduction of portraits.

**Related Subjects Required:** English, mathematics, chemistry, art and bookkeeping.

### **APPLIED DRAWING**

The course in Applied Drawing will be given as a related course in the various trades. It is designed for students majoring in trades and will be offered at the beginning of the third quarter in training.

Prerequisite: Mechanical Drawing 311 and 312.

### **PAINTING AND DECORATING**

(Two Years)

The purpose of this course is to train individuals in the art and skill of house painting and decorating.

**Entrance Requirements:** High school graduation.

**Major Topics:** Elementary and advanced interior and exterior painting, painting special surfaces, mixing colors, the uses of varnishes, stains, enamels, various types of water and oil paints, special decorative effects and paper hanging.

**Related Subjects:** English, mathematics, art and chemistry.

### **SHEET METAL**

(Two Years)

The purpose of this course is to prepare individuals to enter into and to advance in a field that is in great demand and in which workers are usually paid a high hourly wage.

**Entrance Requirements:** High school graduation

**Major Topics:** Manufacture and characteristics of sheet metal, laying out work, constructional methods, methods and requirements in industry, roof covering, gutters, methods in heating and air-conditioning.

**Related Subjects Required:** English, mathematics, mechanical drawing, blueprint reading, freehand drawing.



## VOCATIONAL TRADE COURSES

### AUTO MECHANICS

#### Training Objectives

This is a carefully organized course designed to prepare young men and women to become skilled mechanics. The practical side of the course has been so emphasized that upon the completion of the trade students will be qualified to become owners or managers of an auto service business as well as skilled mechanics in this field. A certificate will be awarded to those students satisfactorily completing the course.

#### Equipment

All large equipment and special tools are furnished by the College but the student is expected to furnish a set of small tools and protective clothing.

#### Length of the Course

Three years of nine months each depending upon the student's experience and ability.

#### Amount of time required in shop

Twenty hours per week, thirty-six weeks per year.

### CURRICULUM

Auto Mech. 411, 412, 413, 421, 422, 423, 431, 432, 433 .....	90 Hrs.
Math. 435, 436 or 311, 312 .....	6 Hrs.
Eng. 211, 212, 213 .....	15 Hrs
M. Sc. .....	12 Hrs.
Physical Ed. .....	6 Hrs.
M. Shop M. E. 328, 329, 330 .....	6 Hrs.
Welding 311, 312, 313 .....	9 Hrs.
B. Adm. .....	10 Hrs.

#### Suggested Electives

Ec. 231, 232, 234

B. A. 332, 333, 337, 339, 346, 351, 335

### COURSES

#### 411. Benchwork

A study will be made and laboratory work given in thread cutting with dies and taps, clipping, filing, drilling, sharpening and use of small tools. Credit 10(4-16).

**412. Maintenance and Service**

Lecture on the principles of operation and maintenance of all chassis parts. Laboratory work will be on the disassembly and reassembly of transmission, rear ends, universal joints, shock absorbers, and braking systems. Credit 10(4-16).

**413. Power Plant**

Lecture, demonstration and laboratory work will be undertaken on the principle of the four-cycle engine, fuel and cooling systems. Credit 10(4-16).

**421. Power Plant**

General shop practice is designed to give a student experience in general overhaul of engine including adjusting of bearings, grinding valves, and installing rings. Credit 10(4-16).

**422. Power Plant**

Instruction will be given on use of the boring bar, connecting rod aligners, use of cylinder hone, reamers, and fitting of pistons. Credit 10(4-16).

**423. Electrical System**

The fundamental principles of the electrical system, including magnetism, generators, starters, voltage and current regulators, automatic chokes, ignition wiring and batteries will be studied. Credit 10(4-16).

**431. Body Work**

Lecture and demonstration on the use and care of body tools. Laboratory projects designed to give skills in body work. Credit 10(4-16).

**432. Painting**

This course is designed to give the student experience and knowledge of spraying of various enamels and lacquers. Credit 10(4-16).

**433. Optional Specialization**

During this quarter the student will do special projects in that phase of Automobile Mechanics in which he is especially interested. Credit 10(4-16).

**CABINETMAKING AND UPHOLSTERING****Training Objectives**

To develop skilled workers in the manufacturing and repairing of furniture and cabinets. English, mathematics and drafting are required according to the needs of the students.

**Length of Course**

Three years of nine months each.

**Amount of Time in the Shop per Year**

Twenty hours per week for thirty-six weeks.

## CURRICULUM

Cabinetmaking 411, 412, 413, 421, 422, 423, 431, 432, 433 .....	90 Hrs.
Eng. 211, 212, 213 .....	15 Hrs.
Math. 435, 436 or 311, 312 .....	6 Hrs.
M. E. 311, 312 .....	6 Hrs.
Vocational Drawing I. A. 331, 332, 333 .....	9 Hrs.
B. Adm. .....	10 Hrs.
M. Sc. .....	12 Hrs.
Phy. Ed. .....	6 Hrs.

### Suggested Electives

- M. E. 327.  
 I. A. 324.  
 Carp. 311, 312.

## COURSES

### First Year

#### **411. Care and Use of Tools**

This course includes studying all common woodworking tools, sharpening cutting tools—grinding and whetting plane bits and chisels, filing auger bits, and sharpening saws. Projects involving the fundamental principles of joinery are provided. Credit 10 (4-16).

#### **412. Elementary Joinery**

The student works on projects involving joinery with a view of gaining a high degree of dexterity. Square and circular table tops are built up with the use of glue. The work is performed mostly by hand. Credit 10 (4-16).

#### **413. Advanced Joinery**

Much practice is given the student in the construction of projects involving mortise and tenon joints and dovetail joints. Projects such as tables, stands, cabinets, and chests give the student an opportunity to make practical application of joinery and at the same time to gain useful skills. Credit 10 (4-16).

### Second Year

#### **421. Wood Turning**

Care and use of woodworking machinery. Construction of a few simple projects involving spindle turning. Emphasis is placed on gaining facility with the turning tools and in duplicating pieces. Credit 10 (4-16).

#### **422. Wood Turning**

Additional practice in spindle turning. Practice in face plate turning and in taper turning. Repairing broken tables and chair legs so as to get experience in duplicating parts. Credit 10 (4-16).

**423. Wood Finishing**

Filling, staining, waxing, varnishing, and enameling, refinishing of furniture. Credit 10 (4-16).

**Third Year****431. Upholstering**

Project involving the various types of caning, seat weaving and upholstery without springs. Credit 10 (4-16).

**432. Upholstering**

Upholstering frame structures, springing up, methods of fastening webbing, stuffings, covering; the use of gimp, nails, springs, hard-edge upholstery, and spring-edge upholstery. Credit 10 (4-16).

**433. Cabinetmaking and Upholstering**

The development of a comprehensive project involving cabinet work, finishing, and upholstering. This project should involve most of the fundamentals of cabinetmaking and upholstery. Credit 10 (4-16).

**CARPENTRY****Training Objectives**

This course aims to develop in the student the knowledge and skills necessary for practical work in carpentry. Related technical information. English, mathematics and drafting are stressed.

**Length of Course**

Three years of nine months each.

**Amount of Time in the Shop Per Year**

Twenty hours per week for thirty-six weeks.

**CURRICULUM**

Carpentry 411, 412, 413, 421, 422, 423, 431, 432, 433 .....	90 Hrs.
English 211, 212, 213 .....	15 Hrs.
Math. 435, 436 .....	6 Hrs.
M. Sc. .....	12 Hrs.
Mech. Drawing 311, 312 .....	6 Hrs.
B. Adm. .....	10 Hrs.
Con. & Specifications M. E. 327 .....	3 Hrs.
M. Shop 328, 329 .....	4 Hrs.
Phy. Ed. .....	6 Hrs.
Electives .....	5 Hrs.

**Suggested Electives**

B. A. 346, 351, 357. I. A. 326.

Math. 315.

Voc. Drawing I. A. 331, 332.

**COURSES****First Year****411. Benchwork**

This course consists of the study and practice of the fundamental operations in woodworking. Emphasis is placed upon the care and use of the most common woodworking tools. Credit 10(4-16).

**412. Benchwork**

Projects involving the various types of joints used by the carpenter are selected. Also the proper care and use of carpentry tools is stressed. Credit 10(4-16).

**413. Building Repair**

A certain amount of repair work is required. Only such repair work is selected as will give the student a fundamental understanding and appreciation of the principles of building construction. Credit 10(4-16).

**Second Year****421. House Framing**

Intensive study will be made of the framing square and its special uses to the carpenter. Methods of placing sills, type of girders, placing and bracing studs will be studied. Credit 10(4-16).

**422. House Framing**

Practical work in door and window framing will be given. The various types of roofs will be constructed in miniature. Application of the steel square to roof construction will be emphasized. Credit 10(4-16).

**423. House Framing**

This course involves study of western or platform construction, balloon and braced frame construction, the making and placing of door and window frames, covering floors, insulating materials, interior trim, selecting and installing hardware. Credit 10(4-16).

**Third Year****431. Stair Building**

Jobs involving the laying out, cutting and placing of straight run stringers, platform flights, dog leg flights, treads, riser, newels, skirtинг boards, rails, balusters, and forms for concrete work. Credit 10(4-16).

**432. Roof Construction**

Jobs involving the cutting, placing and nailing of common, jack, valley and hip rafters by the use of the steel square. Credit 10(4-16).

**433. Blueprint Reading and Estimating**

Principles of orthographic projection. Drawing of plans and details of buildings. Estimating quantities. Credit 10(4-16).

## MASONRY

### **Training Objectives**

The objectives of the program is to develop in the student skills and knowledge in masonry that he may successfully use in practical construction.

### **Length of Course**

Three years of nine months each depending upon student's experience and ability.

### **Amount of Time in Shop**

At least twenty hours per week, thirty-six weeks each year.

## CURRICULUM

Masonry 411, 412, 413, 421, 422, 423, 431, 432, 433 .....	90 Hrs.
Eng. 211, 212, 213 .....	15 Hrs.
Math. 435, 436 or 311, 312 .....	6 Hrs.
M. Sc. .....	12 Hrs.
Phy. Ed. .....	6 Hrs.
Mech. Drawing, M. E. 311, 312 .....	6 Hrs.
Carp. 311, 312 .....	6 Hrs.
Cont. and Specifications M. E. 327 .....	3 Hrs.
B. Adm. .....	10 Hrs.

### Suggested Electives

Art 311, 312

Econ. 231, 234

Math. 315

Voc. Drawing I. A. 331, 332, 333

## COURSES

### First Year

#### **411. Bricklaying**

Construction of walls, piers, and common bond walls. Credit 10(4-16).

#### **412. Bricklaying**

Construction of corners and walls. Using Common and running bonds. Sills for doors and windows, setting of frames and flue construction. Credit 10(4-16).

#### **413. Bricklaying**

Construction of buildings, blueprint reading and scaffold construction. Introduction of Flemish and English bonds. Credit 10(4-16).

### Second Year

#### **421. Tile and Stone Construction**

Hollow tile walls, hollow brick and stone piers, pilasters with battered sides and structural bond. Credit 10(4-16).

**422. Tile and Stone Construction**

Construction of segmental arches, semi-circular, and flat arches. Credit 10(4-16).

**423. Tile and Stone Construction**

Laying off buildings. Pattern construction, mantels and chimney construction of brick or stone, irregular corners, fireplaces and Jack arches. Credit 10(4-16).

**Third Year****431. Plastering and Cement Work**

Study and use of tools, putting up laths, first coat of plaster work. Credit 10(4-16).

**432. Plastering and Cement Work**

Concrete mixing, outside construction of walks and piers. Finish plaster coats, paving. Credit 10(4-16).

**433. Plastering and Concrete Work**

Plastering on all types of lath, cement walk construction, laying out foundation and piers from blue prints. Credit 10(4-16).

**PLUMBING AND STEAMFITTING****Objectives**

The course is designed to prepare skilled mechanics in the field of plumbing and steamfitting. In addition to courses listed, the department reserves the right to require trainees to spend at least one summer on grounds for practical work, unless they can furnish satisfactory evidence that they have had adequate practical experience in their trade.

**Length of Course**

Three years of nine months each depending upon the student's experience and ability.

**Amount of Time in Shops**

Twenty hours a week, 36 weeks per year.

**CURRICULUM**

Plumbing 411, 412, 413, 421, 422, 423, 431, 432, 433 .....	90 Hrs.
Eng. 211, 212, 213 .....	15 Hrs.
Math. 435, 436 or 311, 312 .....	6 Hrs.
M. Sc. .....	12 Hrs.
M. E. 311, 312 .....	6 Hrs.
Welding 311, 312 .....	6 Hrs.
B. A. Electives .....	10 Hrs.
Phy. Ed. .....	6 Hrs.

**COURSES****First Year****411. Care and Use of Tools**

History of Plumbing: Duties and responsibilities of a plumber. Cutting, threading, reaming, and simple fittings. Study of plumbing material. Practical applications. Credit 10(4-16).

**412. Drainage and Vent Pipe Installations**

Drainage pipe arrangements. Supports and connections between pipes. Applications, sewage disposal (field trips). Prerequisite: Plumbing 411. Credit 10(4-16).

**413. Traps in Drainage Systems**

Installation of traps and branch connections. Minor repairs. Prerequisite: Plumbing 412. Credit 10(4-16).

**Second Year****421. Plumbing Laws and Regulations**

Wiping joint, soldering and lead work. Blueprint reading. Prerequisite: Plumbing 413. Credit 10(4-16).

**422. Water Supply**

Cold and hot water. Water treatment method and purification (field trips). Prerequisite: Plumbing 421. Credit 10(4-16).

**423. Estimating and Installation**

This course consists of determining the cost of labor and materials for various installations. Prerequisite: Plumbing 422. Credit 10(4-16).

**Third Year****431. Steam and Hot Water**

The various heating systems. Tools and equipment used in steam-fitting. Sheet metal work. Mechanical equipment of buildings. Prerequisite: Plumbing 423. Credit 10(4-16).

**432. Welding and Brazing**

Acetylene and electric welding in pipe work. Prerequisite: Plumbing 431. Credit 10(4-16).

**433. Copper Tubing and Fittings**

Study and use of copper fittings. Soldering and lead work. Applications. Prerequisite: Plumbing 432. Credit 10(4-16).

**SHOE REPAIRING AND LEATHER WORK****Training Objectives**

To give the student a practical knowledge of the subject matter as well as the necessary training in the related subjects to permit both the operation and maintenance of a shoe repairing and leather work shop, and as skilled workers in the trade.

**Length of the Course**

Two years of nine months each.

**Time in Shop**

A minimum of 20 hours per week for 36 weeks each year.

**CURRICULUM**

Shoe Repair 411, 412, 413, 421, 422, 423 .....	60 Hrs.
Math. 435, 436 .....	6 Hrs.
Eng. 211, 212, 213 .....	15 Hrs.
M. Sc. and Phy. Ed. .....	6 Hrs.
B. Adm. .....	10 Hrs.

**Suggested Electives**

- B. A. 337, 346, 351, 332, 333, 335.  
Ec. 231, 234.  
Art 317, 318.  
M. Shop 328, 329.  
Elec. Wiring I. A. 326.  
Sec. Sc. 317, 318.

**COURSES****411-SR. Threads and Hand Tools**

The study of threads, breaking threads, making waxed ends and twisting bristles on ends. Making various stitches used in hand sewing. The names, care and use of hand tools, sharpening knives and other hand tools. Credit 10(4-16).

**412-SR. Construction**

The methods of fastening the parts of shoes together. The construction of shoes is then studied to enable one to make the proper repairs. Tempering and preparing leather for soles. Cutting off old soles, skiving shanks and preparing shoes for half soles and heels. Credit 10(4-16).

**413-SR. Processing**

Inks, waxes, cement and nails are studied. Cutting sole leather to save. Fitting soles and heels for nailing. Putting lifts on wood heels. Inking, burnishing and finishing shoes on power machines. The care,

operation and use of the patching machine is studied. Special attention is given to rip sewing and neat upper patching. Credit 10(4-16).

#### 421. Bench Work

All students having satisfactorily completed their first-year course in shoe-repairing will begin their second-year course in shoe-repairing with a brief review of the first year's work. Fitting half soles and heels on men's welted shoes. Putting top lifts and half soles on women's welted shoes. Putting new bottoms on men's and women's shoes. Care and use of the buffer and burnishing wheels of finishing machines. Sewing of welts, cutting of inner soles and attaching wood heels. Credit 10(4-16).

#### 422. Machine Operation

Attaching wood heels on women's shoes. Study and operation of the sole cementing process. Care and operation of the edge trimmer and setter. Sharpening edge cutters. Manipulation and care of the power stitcher. Stitching soles on curved needle stitchers, operating auto soles and the mechanics of shoe machines. Credit 10(4-16).

#### 423. Finishing and Shop Management

Problems pertaining to highclass repair work. Changing suede shoes to glazed finish. Dyeing shoes pastel shades and the reglazed process of changing colors. Problems and methods of buying materials. The operation and business methods of the modern commercial shop. Credit 10(4-16).

## TAILORING

### Objectives

To effectively provide training in the various activities relating to the tailoring field. These areas are busheling, repairs, garment construction, and clothing design.

To develop through various methods, skilled craftsmen who may gainfully engage in any phase of the tailoring craft.

To maintain high standards of efficiency in training so that graduates of this course may qualify as shop owners, operators, or skilled mechanics in the field.

### Length of Course

Three terms of nine months or 27 consecutive months.

### Amount of Time in the Shop

A minimum of 20 hours per week for 36 weeks each year is required.

## CURRICULUM

Tailoring 411, 412, 413, 421, 422, 423, 431, 432, 433 .....	90 Hrs.
Math. 435, 436 or 311, 312 .....	6 Hrs.
English 211, 212, 213 .....	15 Hrs.
Mil. Sc. ....	12 Hrs.
Business Administration 335 or 351 .....	5 Hrs.
Art 311, 312 .....	6 Hrs.
Dry Cleaning 311, 312 .....	6 Hrs.
Sociology 231 .....	5 Hrs.
Physical Education .....	3 Hrs.

## COURSES

## First Year

**411. Use and Care of Tools and Machinery. The Basic Hand Stitches**

Proper method of using and caring for tools. Needles and thimble exercises to develop hand sewing skills. Practice in making the hand stitches. Machine operation to develop skill in stitching. Credit 10(4-16).

**412. Pocket Making**

The location and dimensions of the different types of trouser pockets. Practice pocket making: side, hip (welt and piped), watch, and flap pockets. A study of various woolen fabrics and trimmings used by tailors. Credit 10(4-16).

**413. Trouser Making**

Assembling the regular cut trousers. Introduction to trouser drafting. Study of the use and care of the tailoring machines. Credit 10(4-16).

## Second Year

**421. Review of Principles in Trouser Making**

A study of the different types of trousers. Primary alterations and repairs on trousers. Trouser drafting, fitting and skirt making. Use and maintenance of special machines as follows, nomenclature, oiling, regulating machine for different types of materials, preparation for stitching, and actual operation. Credit 10(4-16).

**422. Busheling and Repairs**

This entire quarter is to be spent in all types busheling and repairs. Among the repairs to be featured are: visible and invisible patching, recuffing, altering trouser waist and length, and many other types of repairs. A study of various types and sizes of buttons and where to use them. Shop management, job estimates in costs, time, and labor. Credit 10(4-16).

**423. Shop Management and Cost Estimation Continued.****Vest Construction**

Practice in making vests, waistcoats, and jackets both lined and unlined. A study of tailoring trimmings and stock-room procedures. Vest drafting and fitting. Credit 10(4-16).

**Third Year****431. Introduction to Coat Making**

Practice in all types of pockets usually found in sack coats and over-coats. Explanation of materials and techniques not previously used. A study of the sequential steps, styles, and trimmings used in coat making. Credit 10(4-16).

**432. Coat Drafting and Suit Layout Techniques**

A study of the various techniques which may be employed in suit layouts, marking, and cutting both three-piece and four-piece models. The last six weeks of this quarter will be spent on individual projects. The project will consist of drafting, cutting, trimming, and making a complete three-piece suit. The instructor will serve only in an advisory capacity during these projects. Credit 10(4-16).

**433. Coat Making Continued**

A study of all types of coats such as two button sacks, three button sacks, both single-breasted and double-breasted models. In addition, over-coats, topcoats, toppers and ladies' coats will also be studied. The last portion of this quarter will be utilized in advanced busheling such as shortening collars, remodeling, relining sleeves and coats and other similar operations. Reviews, critiques, and examinations will complete this phase of the work. Credit 10(4-16).

**WELDING****Training Objectives**

This is a carefully organized course designed to prepare young men and women to become skilled Electric Arc Welders. The practical side of the course has been so emphasized that upon completion of the trade, students will be qualified to become owners or managers in Electric Arc Welding business as well as skilled mechanics in industry.

**Length of Course**

Twelve months. The time, however, will depend upon the student's experience and ability to pass standard tests.

**Amount of Time in Shops**

Twenty hours per week for forty-eight weeks.

**CURRICULUM**

Welding 411, 412, 413, 421 .....	40 Hrs.
English 211, 212 .....	10 Hrs.
Math. 435, 436 or 311, 312 .....	6 Hrs.
Electric Wiring 326 .....	2 Hrs.
Mechanical Drawing 311, 314 .....	6 Hrs.
Electives .....	4 Hrs.
Suggested Electives: Art 311, B. A. 351, M. E. 328.	

**COURSES****411. Welding**

Electric arc welding. Care and operation of welding machines. A study of various welding rods and their uses. Current ratings for different kinds of welding. Practice in running beads and preparing work for welding. Credit 10(4-16).

**412. Welding**

Horizontal and vertical joints. Practice in laying continuous beads with different types of rods. Practice in welding butt and lap joints. Credit 10(4-16).

**413. Welding**

Vertical and Overhead joints. Practice in laying vertical and overhead beads. Intensive practice in selection of right type of rod for material use. Practice to prepare students to pass the American Welders Society Guide Bend Test. Credit 10(4-16).

**421. Welding**

Oxy-Acetylene welding practice on various joints in all positions. Care and adjusting of equipment. Cutting and brazing on light and heavy work. Welding and brazing of different types of metals. Practicing Butt Joints in all Positions and Testing. Credit 10(4-16).

**RELATED TECHNICAL COURSES****411. Applied Drawing**

Instruction in the basic principles of mechanical drawing. Emphasis is placed upon the development of skills in using the drafting instruments and materials. Credit 3(0-6).

**412. Applied Drawing**

This instruction includes sectional views, pictorial drawing, auxiliary views, and drafting procedures. Prerequisite: 411. Credit 3(0-6).

**413. Applied Drawing**

Instruction in the principles of drafting as applied to the respective fields and minor layouts, also drawings and symbols for building construction as required of a student in the building trades. Prerequisite: 412. Credit 3(0-6).

**435. Applied Math.**

This course consists of application of mathematics to practical problems that may arise in the field and shop. It helps the students to apply their mathematics to everyday problems. Credit 3(3-0).

**436. Applied Math.**

Continuation of 435 with emphasis placed on problems in respective fields. Prerequisite: 435. Credit 3(3-0).

**ELECTIVE INDUSTRIAL EDUCATION COURSES**

These courses are designed for those students pursuing the regular college courses, and yet desiring some training in vocational fields. The students are given thorough drilling and are required to attain a knowledge of the subject matter. The courses are offered on the college level and regular college credit is allowed.

**311. Auto Mechanics**

Construction and operation of power systems. Fuel and cooling systems. Lubrication, washing and polishing. Repair of tires. Credit 3(0-6).

**312. Auto Mechanics**

Study of ignition system, wiring and lighting system, batteries and their care, starter and generators. Credit 3(0-6).

**313. Auto Mechanics**

Minor repairs to safety devices. Brake adjustments. Credit 3(0-6).

**311. Cabinet Making**

Care and use of hand tools, wood turning, pattern making, or work to suit individual interest. Credit 3(0-6).

**312. Cabinet Making**

Care and use of power tools. Built-in cabinet. Small projects as desk, bookcases or useful projects for the home. Credit 3(0-6).

**313. Cabinet Making**

Inside trim. Varieties and characteristics of timber used in projects. Applying hardware, application of stain, varnish, shellac and enamel. Credit 3(0-6).

**314. Cabinet Making**

General building and repair work in furniture and cabinet construction. Prerequisite: I. A. 323. Credit 3(0-6).

**311. Carpentry**

Study and use of hand tools. Types of joints used in construction. General framing and bracing. Credit 3(0-6).

**312. Carpentry**

Blueprint reading and estimating of qualities. General construction of small projects of roof covering. Credit 3(0-6).

**313. Carpentry**

Stair building. General roof construction. Flooring. Experience on practical building. Credit 3(0-6).

**314. Carpentry**

General building and repair work in carpentry. Prerequisite: I. A. 323 or the equivalent. Credit 3(0-6).

**311. Dry Cleaning**

A study of steps necessary to complete a cleaning job. Methods of marking and assembling clothes. Some cleaning room practice. Credit 3(0-6).

**312. Dry Cleaning**

A study of finishing room tactics. Actually finishing silk and wool garments. Credit 3(0-6).

**313. Dry Cleaning**

General theory on dry cleaning operations. Plant Management. Credit 3(0-6).

**314. Dry Cleaning**

(Hat Blocking). Methods of cleaning and blocking ladies' and men's hats. Credit 3(0-6).

**311. Electric Wiring**

This course covers the fundamental principles of two and three wire circuits for light and power. Credit 3(0-6).

**312. Electric Wiring**

Study of and use of electrical wiring material. Credit 3(0-6).

**313. Electric Wiring**

Study of the electrical code. Credit 3(0-6).

**311. Laundry Management**

Assorting, classifying and loading of washers and extractors. Theory and practice. Credit 3(0-6).

**312. Laundry Management**

Receiving, marking and inspection of garments. Credit 3(0-6).

**313. Laundry Management**

Finishing, hand and machine care and maintenance of equipment. Credit 3(0-6).

**311. Machine Shop Practice**

A general introduction to machine shop methods. A study of small precision tools, lathes, shapers and drill presses. A study of the different types of steels and other metals used in machine shop. Construction of small projects. Credit 3(0-6).

**312. Machine Shop Practice**

A study and use of milling machines, turret lathes, grinders, and special machines. Construction of small projects requiring the use of each. Prerequisite: Machine Shop 311. Credit 3(0-6).

**313. Machine Shop Practice**

Continuation of machine shop 312. The construction of some project requiring the use of all machines in the shop. Prerequisite: Machine shop 311 and 312. Credit 3(0-6).

**311. Masonry**

Types of brick and their use in construction. Mortar mixing, thickness of joints, tools and practice work. Credit 3(0-6).

**312. Masonry**

Study of mortar, bonds, joints, pointing up. Practice work. Credit 3(0-6).

**313. Masonry**

Estimating, arches, lintels, chimneys and fireplaces. Practical jobs. Credit 3(0-6).

**311. Plumbing**

Care and use of tools: History of plumbing: Duties and responsibilities of a plumber. Cutting, threading, reaming, and simple fittings. Study of plumbing material. Credit 3(0-6).

**312. Plumbing**

Drainage and vent pipe installation: Drainage pipe arrangements. Supports and connections between pipes. Sewage disposal. Prerequisite: Plumbing 411. Credit 3(0-6).

**313. Plumbing**

Installation of traps and branch connections. Minor repairs. Pre-requisite: Plumbing 412. Credit 3(0-6).

**311. Radio**

This course consists of Ohm's and Kirchoff's Laws, study of radio symbols and schematic diagrams, voltmeters, ohmmeters, current and voltage measurements, radio principles, continuity checks, and fundamental shop techniques. Credit 3(0-6).

**312. Radio**

This is a continuation of 311 with emphasis on the function of capacitors and inductors in A.C. and D.C. circuits, diagram studies of the superheterodyne receiver. Credit 3(0-6).

**313. Radio**

Vacuum tube characteristics, Piezo-electric effect, phonograph pickups and amplifiers, vibrator power supplies, and servicing of automobile receivers. Credit 3(0-6).

**311. Shoe Repairing**

The study of threads, making waxed ends and twisting bristles on ends. Stitches used in hand sewing. Care and use of hand tools for leather work. Credit 3(0-6).

**312. Shoe Repairing**

Construction. Methods of fastening parts of shoes together. Tempering and preparing leather for soles. Preparing shoes for half soles and heels. Ink dyes, cement and nails are studied. Bench work. Credit 3(0-6).

**313. Shoe Repairing**

Machine operation. Care and use of power stitcher. Cement process. Sewing of welts and cutting. Curved and straight needle stitchers. Finishing. Changing of color. Credit 3(0-6).

**314. Shoe Repairing**

Leather Craft. History of leather craft. Types of leather, tools and their uses. Lacings, slitting, tooling, stamping, dyeing, pattern cutting and the use of cement. Making of key cases, coin purses, bill folds and hand bags. Credit 3(0-6).

**311. Tailoring**

A study of the use of simple sewing equipment. Practice in simple hand stitches such as felling, darning, back stitching and others which may be utilized in doing simple repairs. Credit 3(0-6).

**312. Handstitches Continued**

A study of materials, their characteristics, differences, and similarities. A study of the various masculine garments and their construction. A survey of formal wear, types, seasonal use, color dynamics, and combinations. Credit 3(0-6).

**313. Tailoring**

A study of style trends, machine maintenance and operation, practice sewing, and simple repairs. A study of buttons and threads. Credit 3(0-6).

**311. Welding**

**Electric Arc Welding.** The purpose of this course is to give students a knowledge and understanding of the welding process and its possibilities. A knowledge of the limitation of the process, of the apparatus used, of the common metals, their composition, their properties and methods of identification. Practice work in various types of flat beads and welds. Credit 3(0-6).

**312. Welding**

Continuation of 311 with practice in more difficult welds in flat and horizontal position. Credit 3(0-6).

**313. Welding**

**Electric Arc Welding.** A study of the different types of metals and welding rods to be used with steel, cast iron, malleable iron and more common metal. Skill in handling the welding machine as applied to practical jobs. Practice in Vertical and Overhead Welds. Oxy-Acetylene Gas Welding and Resistance Welding. Credit 3(0-6).

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**PRIZES AND AWARDS, 1952**

1. The Spaulding Medal Award for Excellence in the School of Agriculture.  
Winner—Arthur Reese, Jr., Columbia, South Carolina.
2. The Merrick Medal Award for All-round Excellence in the School of Mechanic Arts.  
Winner—Charles Freeman Perry, 819 Douglas Street, Greensboro, North Carolina.
3. The Charles L. Cooper Award for Excellence in Industrial Arts.  
Winner—Harrison Smith, 115 Speed Street, Elizabeth City, North Carolina.
4. The Saslow's, Inc., Medal for the Best Record in the School of Education and Science.  
Winner—John M. Haile, Post Office Box 334, Alachua, Florida.

5. The Saslow's, Inc., Medal for the Best Record in the Field of Social Sciences.  
Winner—Cranston Wadsworth Boyd, 427 Wicklow Street, Pittsburgh 24, Pennsylvania.
6. The Susie B. Dudley Scholarship of \$100.00 presented by Mrs. L. J. Spaulding, Realtor, to a worthy student in the Graduate School, in memory of Mrs. Susie B. Dudley.
7. The Agricultural Association Scholarship Award to the student of Junior standing with the best record in the School of Agriculture. Winner—Thomas Earl Brown, Route 1, Box 7-A, Trenton, North Carolina.
8. The Pan-Hellenic Council Scholarship Award of \$50.00 to the student below senior classification with the best record in Scholarship and Deportment.  
Winner—Margaret Trisvan, Route 1, Box 40, Jarrett, Virginia.
9. The William H. Foushee Memorial Scholarship Cup Award to the member of the Junior Class with the Highest Scholastic Average presented by Dr. J. M. McGee, of Greensboro.  
Winner—Margaret Trisvan, Route 1, Box 40, Jarrett, Virginia.
10. The Gate City Chapter, Alumni Association Award to that member of the Graduating Class voted by the Administrative Council as having rendered the Most Distinctive Service in interpreting the ideals of the College to the Community.  
Winner—Ola Mae Frye, Ellerbe, North Carolina.
11. The Philadelphia Chapter, Alumni Association Gold Medal Award to the Best All-round Athlete in the Graduating Class.  
Winner—William Henderson Blakely, 105 Fulton Street, Warren, Ohio.
12. The Register's Award for two years of Meritorious Service on the staff of "The Register," campus newspaper.  
Winners—Josue Amaro, Post Office Box 215, Guayama, Puerto Rico; Rudolph Gadson, Route 1, Box 24, Maysville, North Carolina; Ollie Bell Norman, Box 172, Pisgah Forest, North Carolina; Howard Lee Ward, 1625 N. Trade Street, Winston-Salem, North Carolina; Ann Watts, 446 Byrd Street, Greenwood, South Carolina; Arthur B. Word, 407 Nowlin Street, Roxboro, North Carolina.
13. The Gold Key Award for Four Years of Meritorious Service in the A. and T. College Choir.  
Winners—William C. Keen, 519 High Street, Thomasville, North Carolina; Frances M. Lancaster, Box 66, Farmville, Virginia.
14. The Silver Key Award for Three Years of Meritorious Service in the A. and T. College Choir.  
Winners—James N. Floyd, Route 1, Box 3, Fairmont, North Carolina; Susie L. Harrington, 200½ Huffman Street, Greensboro, North Carolina; Gwendolyn M. Holt, 1116 E. Market Street, Greensboro,

North Carolina; Joel Norwood, Route 2, Box 70, Oxford, North Carolina; Curtis L. Powell, 1207 Dawson Street, Wilmington, North Carolina; Gwendolyn E. Pullen, 1833 Second Street, Lynchburg, Virginia.

15. The Bronze Key Award for Two Years of Meritorious Service in the A. and T. College Choir.

Winners—Ramona C. Brame, Route 5, Box 241, Henderson, North Carolina; Carl H. Cherry, Route 1, Box 3, Hassell, North Carolina; Madeline N. Gill, 920 E. Market St., Greensboro, North Carolina; Bessie E. Hodge, Building 807, Apartment 5, Fort Eustis, Virginia; Samuel J. Hosey, 98 Railroad Street, Wheatland, Pennsylvania; Marion E. Hughes, 806 Kilby Avenue, Suffolk, Virginia; Larry W. Hyman, Box 9A, Oak City, North Carolina; Charles W. Jackson, 2359 N. 19th Street, Philadelphia, Pennsylvania; Gwendolyn V. Judge, 1515 Highland Avenue, Tampa, Florida; Carey Lassiter, 310 S. East Street, Raleigh, North Carolina; Raymond A. McDonald, McDonald, Route 3, Box 325, Norfolk, Virginia; Richard E. Moore, 1016 Market Avenue, Farrell, Pennsylvania; Esther Peterson, Route 2, Box 6, Grifton, North Carolina; Emory J. Reddick, 924 Chestnut Street, Tampa, Florida; Alice Russell, Route 5, Box 208, Henderson, North Carolina; Ruby G. Swinson, Route 4, Goldsboro, North Carolina; Wendel R. O. Vauls, 127 Chestnut Avenue, Annapolis, Maryland; Barbara M. Williamson, 745 Main Street, Danville, Virginia.

16. The Band Awards for Four Years of Meritorious Service in the A. and T. College Band.

Winners—Albert Baker, Route 2, Rocky Mount, North Carolina; Major Gilchrist, 509 Roosevelt Street, Laurinburg, North Carolina; Melvin L. Harris, Kimball, West Virginia; Vernetta L. Lee, 2516 Chapel Street, Norfolk, Virginia; Lawrence Johnson, 607 Styre Street, Reidsville, North Carolina; Virginia Ann Seales, 703 Harrison Street, Reidsville, North Carolina; Vernice Shanks, 214 Georgia Avenue, Concord, North Carolina; Alexander Watson, 810 Glendale Avenue, Durham, North Carolina; Vernell Watson, 808 Glendale Avenue, Durham, North Carolina.

17. The Alpha Nu Chapter, Kappa Alpha Psi Fraternity Scholarship Cup presented to the College Sophomore with the Highest Cumulative Scholastic Average.

Winner—Ernest Lee Tansimore, 1209 Orange Road, Culpeper, Virginia.

18. The Rand-Hawkins-McRae Debating Trophy presented by Messrs. J. M. Rand, J. A. Hawkins and S. D. McRae, graduates of the College, to the member of the graduating class for outstanding performance in four years of Varsity Debating.

Winner—Barney R. Putnam, 118½ Cherry Street, Asheville, North Carolina.

19. The Debaters Certificate of Merit awarded to members of the graduating class who have rendered four years of service with the Kappa Phi Kappa Debating Society of the College.  
Winners—Charles Brooks, 921 Main Street, Tampa, Florida; Sampson Buie, Route 2, Box 126, Fairmont, North Carolina; Katye Graham, Route 1, Box 24, Raeford, North Carolina; Barney R. Putnam, 118½ Cherry Street, Asheville, North Carolina.
19. The Kappa Phi Kappa Debating Trophy to the graduating senior who was the most Cooperative and Dependable member of the Debating Society.  
Winner—Charles Brooks, 921 Main Street, Tampa, Florida.
20. Graduates who are recognized and cited for Meritorious Service in Religious Activities on the campus.  
Winners—Sampson Buie, Route 2, Box 126, Fairmont, North Carolina; Odessa Burris, Route 1, Box 194-A, Kings Mountain, North Carolina; Effie Elliott, 314 Pine Street, Fayetteville, North Carolina; Ethel Johnson, 323 Buffalo Street, Shelby, North Carolina; Ollie Norman, Box 172, Pisgah Forest, North Carolina; Willie B. McLawhorn, Route 1, Box 297, Grifton, North Carolina; Cora Patillo, 403 Hall Street, Franklin, Virginia; Coleman Roberts, Box 22, Ellenboro, North Carolina; Roy Shipman, Post Office Box 391, Forest City, North Carolina.

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## GRADUATING SENIORS HOLDING MEMBERSHIP IN SCHOLASTIC AND SCIENTIFIC HONOR SOCIETIES

### ALPHA KAPPA MU HONOR SOCIETY

Jerry Crawford	Ethel Johnson
Dawson C. Deese	Barney Riley Putnam, Jr.
Rex Ellis	James Norfleet Slade
John Milton Haile	

### BETA KAPPA CHI SCIENTIFIC SOCIETY

Jerry Crawford	John Milton Haile
Dawson C. Deese	James Norfleet Slade
Rex Ellis	

### SIGMA RHO SIGMA HONOR SOCIETY

Melvin Cleon Barcliff	Ressie Zelma Curry
William Henderson Blakely, Jr.	Barney Riely Putnam, Jr.
Linwood Dallas Blount	Sara Louisea Smith
Cranston W. Boyd	Bryant Wooten

## TRADE CERTIFICATES

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Auto Mechanics—Anthony, Herman; Bell, Leon S.; Black, James Brodie; Brown, Timothy; Cradle, James Jr.; Dixon, Charles Earl; Lassiter, Roscoe L.; McQueen, John C.; Marrow, John Herbert; Petty, Glenn Hall; Ramsey, William Lee; Stokes, Theophilus O. Jr.; Thomas, Franklin Monroe; Walker, Samuel Linwood; Watkins, Henry Walter; Williams, Amos.

Cabinet Making—Bowden, John Moseley, Jr.; Clark, Clarence L.; Pace, Thomas J.; Wilson, Isaac; Wilson, Seawell Carlton.

Carpentry—Paige, John Jacob.

Dress Making—Edwards, Elnora Pernell; Smith, Versia Bernice; Waddell, Elmer G.; Williams, Minnie Beatrice.

Dry Cleaning—Coffey, William H.; Mebane, Irvin; Yelverton, James William.

Electric Wiring—Clyburn, Dan Allen; Coles, Zephyr B., Jr.; Daniels, William Whitt.

Machine Shop Practice—Lassiter, Grady.

Masonry—Andrews, John B.; Boglin, Samuel; Fountain, John Elmore; Hammonds, James Colen; Myers, James Thomas; Rollins, Charles Edward.

Plumbing—Garrett, Eugene Norman; Lassiter, Leonard Fulmer; Peed, Theodore Roosevelt, Jr.

Radio Servicing—Bolton, Edward Coolidge; Bouldin, Silas; Logan, Daniel Roshelbert; Trotter, Alexander.

Shoe Repairing—Chisom, Willie Freeman; Coleman, James; Hill, Walter Perry; Lomax, Robert Louis; Minor, William Elmore; Morehead, John Herbert; Rendleman, Tillis E.; Whitfield, Toussaint Philip, Sr.

Tailoring—Bailey, Robert James, Jr.; Branch, Annie Ruth; Brown, Junius; Butler, George Edward; Fuller, Eula Jeanne; Harding, Dorothy O.; Holland, Alene Frances; Majett, Joseph E.; Miller, John Abraham; Scott, Mildred Joyce; Smith, George N.; Springs, Charles Wesley; Vauls, Wendell Robert Oliver; Wilkins, Raymond C.; Williams, Bennie, Jr., Wilson, Willie G.

**CANDIDATES FOR COMMISSIONS AS SECOND LIEUTENANTS  
IN THE UNITED STATES ARMY (INFANTRY)**

Alston, Bernard R.	*Hatch, William T.	Rice, William J.
Alston, William D.	Hawkins, William E.	Richards, Earlie
Amaro, Josue E.	Howell, Ernest R.	Richardson, Lester H.
Anderson, Asa W., Jr.	*Hunt, Frizell	Ritter, Melvin
Askew, Albert A., Jr.	Hunt, John H.	Ross, Ernest
*Banks, Emmett L.	James, David T.	Russell, Alfred E.
Barner, John V.	Johnson, Lawrence L.	Scipio, Rudolph
Beatty, John S.	Jones, Dallas O.	Shipman, Roy L.
*Brewington, C. W.	Kelly, Amos L.	*Simms, William F., Jr.
*Brown, Seymour C.	Lawrence, James, Jr.	Sinclair, Thomas E., Jr.
Buie, Sampson, Jr.	Lee, Austin R.	Small, Rodger L.
Byers, James A.	Legrand, Matthew T.	Smith, James W.
Caple, Johnny M.	Little, Robert L.	Smith, Linwood J.
Carson, Vernon M.	Mayo, Charlie E.	Smith, Robert P.
Coffey, Charles E.	McCallum, Ernest	Snell, Ira, Jr.
*Collins, Marshall R.	McCollum, James	Southerland, Arthur, Jr.
Cox, James W.	McCormick, J. C., Jr.	Stephen, Ronald W., Jr.
Crawford, Jerry	McCormick, T. M.	Stewart, Harvey L.
Dean, Robert B., Jr.	McKee, Roger	Tate, James E.
Fair, Preston	McKoy, Clinton L.	Taylor, Jerry W.
Fennell, Joseph W.	McLean, Jimmie W.	Trent, Leslie W.
Garcia, Anibal F.	Meadows, Helburn, Jr.	Tyson, Charlie J.
*Gibson, Jack H.	Mills, Robert E.	Villegas, Agustin, Jr.
Goodlett, Johnie C.	*Morgan, Alfred W.	Vines, Otis B.
Grainger, Felton I.	Olden, Simon, Jr.	Washington, Leroy T.
Graves, William V.	Packenham, John H.	Williams, James I.
Greene, Uriel L.	Payne, Delbert S.	Wilson, Willie G.
*Hall, Vance E.	Peace, Richard G.	Word, Arthur B.
Hendrick, James B.	Pellam, John E.	Wright, William H.
Harris, Rucker M., Jr.	Powell, Curtis L.	

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\*Distinguished Military Students.

## DEGREES CONFERRED JUNE 2, 1952

### RANKING STUDENTS

With Highest Honor .....	Robert Lee Clemons
With Highest Honor .....	John Milton Haile
With Highest Honor .....	Charles F. Perry
With Highest Honor .....	Arthur Reese, Jr.
With Highest Honor .....	James Norfleet Slade
With High Honor .....	Roy Lee Bass
With High Honor .....	Cranston W. Boyd
With High Honor .....	Jerry Crawford
With High Honor .....	Hubert S. Gaskin
With High Honor .....	William Thomas Hatch
With High Honor .....	James Harvey Hunt
With High Honor .....	Cordia Mae Johnson
With High Honor .....	Delbert Samuel Payne
With High Honor .....	Barney Riley Putnam, Jr.
With Honor .....	Rudolph Douglas Artis
With Honor .....	William Henderson Blakely, Jr.
With Honor .....	George William Chavis
With Honor .....	Rex Ellis
With Honor .....	Katye Beverly Graham
With Honor .....	James Elijah King
With Honor .....	Florence Katheryn Shirley Moore
With Honor .....	Ollie Belle Norman
With Honor .....	William Jasper Rice
With Honor .....	Sara Louisea Smith

### BACHELOR OF SCIENCE IN AGRICULTURE

Juan Miguel Sanchez-Alemany.....	Box 22, Guayama, Puerto Rico
John Edward Alston.....	2601 E. Market St., Apt. 2-C, Greenboro, N. C.
William Daniel Alston.....	P. O. Box 12, Littleton, N. C.
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William McDuffy Bass.....	343 Branch St., Reidsville, N. C.
Odell Andrew Bizzell.....	P. O. Box 393, LaGrange, N. C.
Truman Claude Boone.....	Sedalia, N. C.
Walter Delmus Bryant.....	Rt. 1, Bolivia, N. C.
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James Luther Butler.....	1409 Fifth St., Lynchburg, Va.
Samuel Clemons.....	Rt. 1, Box 91, Morven, N. C.
Burnett Collins .....	Amour, N. C.
Lonnie Cook, Jr.....	Rt. 1, Box 208-A, Leaksville, N. C.
Charles Cottingham.....	106 S. Luther St., Greensboro, N. C.
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George Thomas Currie.....	P. O. Box 148, Chadbourn, N. C.
Brooks Franklin Davidson.....	Rt. 1, Box 197, Huntersville, N. C.

Fred Percy Debnam.....	Rt. 2, Box 111, Raleigh, N. C.
Rice Rutherford DeLoatche.....	Rt. 1, Box 73-A, Jackson, N. C.
Joseph L. Dey.....	Rt. 2, Box 47, Hickory, Va.
James W. Dixon.....	Rt. 1, Box 104, Warsaw, N. C.
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Hugene Gerald.....	812 E. Bragg St., Greensboro, N. C.
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Atlee Gore.....	Star Rt. 1, Box 17, Supply, N. C.
Uril Lawrence Greene.....	Rt. 2, Box 303, Trenton, N. C.
Joseph W. Greenlee.....	422 S. French Broad Ave., Asheville, N. C.
Warren Elmer Hankins.....	Southport, N. C.
Elwood Johnson.....	Rt. 2, Box 136, Tabor City, N. C.
Winston Salem Jones.....	Rt. 1, Box 48, Waverly, Va.
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Esau Samuel McCaskill.....	P. O. Box 33, Candor, N. C.
Leroy McDougal, Jr.....	P. O. Box 373, Rowland, N. C.
Letember McDowell.....	409 Dudley St., Greensboro, N. C.
Ledell Stevenson McIntyre.....	Rt. 2, Box 166, Rocky Point, N. C.
Hugo Alarence McLaurin.....	Rt. 1, Box 86-A, Fayetteville, N. C.
William Theodore Mitchell.....	601 Parker St., Goldsboro, N. C.
Lloyd W. Moore.....	1401 Wallace St., Apt. 4, Winston-Salem, N. C.
Madison Peebles Mullen.....	106 Lewis St., Roanoke Rapids, N. C.
William Howard Newton.....	Rt. 2, Box 83-A, Gibson, N. C.
William Dudley Neill, Jr.....	Rt. 1, Box 74, Council, N. C.
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Walter Price.....	Rt. 1, Box 26, Littleton, N. C.
Arthur Reese, Jr.....	2461 Gervais St., Columbia, S. C.
Robert F. Reid.....	P. O. Box 321, Jefferson, S. C.
Ernest Theodore Revells.....	Rt. 2, Box 44, Selma, N. C.
Amos Green Richardson.....	Rt. 2, Box 326, Wadesboro, N. C.
Bennie Bruce Riddick.....	400 Maple St., Ahoskie, N. C.
Melvin Mid Ritter, Jr.....	447 W. Codorus St., York, Pa.
Coleman Thomas Roberts.....	P. O. Box 22, Ellenboro, N. C.
Maurice Matthew Robinson.....	Rt. 1, Box 156, Lynch Station, Va.
William Edward Royster.....	Star Rt., Box 71, Littleton, N. C.
James R. Ruffin.....	Rt. 1, Box 137, Stantonsburg, N. C.
Alfred Earl Russell.....	P. O. Box 147, Manson, N. C.
David Levi Simmons.....	94-08 56th Ave., Elmhurst, N. Y.
George Washington Taylor.....	Rt. 2, Box 244, Elizabeth City, N. C.
Cleveland Vines.....	Rt. 2, Box No., Farmville, N. C.
Cline Jefferson Warren.....	Rt. 1, Box 73, Belews Creek, N. C.
James Edward Wright.....	Rt. 1, Box 111, Atkinson,N.C.

#### BACHELOR OF SCIENCE IN HOME ECONOMICS

Frances Marie Barnes.....	Rt. 2, Smithfield, N. C.
Pearline Black.....	1506 S. Ashe St., Greensboro, N. C.

Dorothy Mae Brock.....	Box 64, Pantego, N. C.
Dora Blow Brown.....	Box 227, Courtland, Va.
Reva Clinton.....	141 Jackson Terrace, Charlotte, N. C.
Jossie Mae Cooper.....	Rt. 1, Box 106, Como, N. C.
Willette Elizabeth Gavin.....	624 Poplar St., Goldsboro, N. C.
Katy Beverly Graham.....	Rt. 1, Box 24, Raeford, N. C.
Luella Virginia Holmes.....	1206 Salem St., Greensboro, N. C.
Vivian Wilhelmina Jacobs.....	967 Denhart St., Norfolk, Va.
Maude Kathleen Jones.....	201 Shepard St., Elizabeth City, N. C.
Vernestene Joyner.....	Rt. 1, Box 15, Franklin, Va.
Savannah Johnson LeSueur.....	2601 E. Market St., Greensboro, N. C.
Willie Bea McLawhorn.....	Rt. 1, Box 297, Grifton, N. C.
Lucille Bass Nesbitt.....	137 Blanton St., Asheville, N. C.
Myrtle Louise Littlejohn Nesbitt.....	137 Blanton St., Asheville, N. C.
Verna Webber Patterson.....	227 S. Mountain St., Cherryville, N. C.
Louise Richardson.....	1841 Kentucky Ave., Winston-Salem, N. C.
Sallie Mae Underwood.....	725 Baptist St., Greensboro, N. C.

#### BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Bernard Ross Alston.....	1208 Seventh St. East, Bradenton, Fla.
Samuel Lee Bishop.....	410 W. 37th Place, Sayreton, Birmingham, Ala.
Evan Brown.....	Rt. 2, Box 34, Clarkton, N. C.
Albert Isaac Carter.....	703 Patterson Ave., Winston-Salem, N. C.
George William Chavis.....	336 Salisbury St., Wadesboro, N. C.
William Clark, Jr.....	Rt. 2, Hodges, S. C.
Leonard Q. Collier.....	1501 Lindsay St., Greensboro, N. C.
James Randall Fisher.....	133 Adams St., Steelton, Pa.
James Fletcher Jeffries.....	152 W. Stokes St., Danville, Va.
James Elijah King.....	Rt. 2, Box 76, Rutherfordton, N. C.
Leonard Vernon Lassiter.....	Rt. 2, Box 218, Ahoskie, N. C.
Chauncey Atworth Linney.....	Rt. 1, Box 51, Hiddenite, N. C.
James Meachem, Jr.....	2601 E. Market St., Greensboro, N. C.
Thomas Moss.....	107 Brown St., Thomasville, N. C.
Joseph M. Poteat.....	4713 Jay St., N. E., Washington, D. C.
Joseph Arrin Raines, Jr.....	2708 Old Lexington Rd., Winston-Salem, N. C.
Jacob Astor Spease.....	200 Raleigh St., Greensboro, N. C.
Elsie Leroy Steele.....	1335 Shuttle St., Winston-Salem, N. C.
Zennie James Ward.....	P. O. Box 227, Maysville, N. C.
Charles Edward Webber.....	502 W. Harrison Ave., Gastonia, N. C.
Elijah Williams, Jr.....	Box 38, Aiken, S. C.
Arthur Balboa Word.....	407 Nowlin St., Roxboro, N. C.
James Mack Wyrtch, Jr.....	1118 E. 4th Ave., Williamson, W. Va.

#### BACHELOR OF SCIENCE IN COMMERCIAL EDUCATION

Gloria Yvonne Ager.....	208 Buffalo St., Shelby, N. C.
Mabel Beatrice Alexander.....	Rt. 1, Box 106-D, Warrenton, N. C.

Blanche Elizabeth Ayner.....	815 Beaty's Ford Rd., Charlotte, N. C.
Marteena Eugenia Brodnax.....	407 Banks St., Greensboro, N. C.
Louise Christine Davis.....	18 Morgan St., Asheville, N. C.
Doris Gwendolyn Dean.....	1803 E. Market St., Greensboro, N. C.
Gladys Gwendolyne Drake.....	414 Banks St., Greensboro, N. C.
Essie M. Edwards, 411 Jackson St.....	Badin, N. C.
Effie Jane Elliott.....	314 Pine St., Fayetteville, N. C.
Ola Mae Frye.....	Post Office, Ellerbe, N. C.
Ralph Bernard Galloway.....	608 Julian St., Greensboro, N. C.
Dorothy Evelyn Greenlee.....	Box 112, Ridgecrest, N. C.
Ethel Pearl Harrell.....	Box 55, Eure, N. C.
Leroy Henderson.....	P. O. Box 244, Manson, N. C.
Nathaniel Luford Hines.....	P. O. Box 144, Bladenboro, N. C.
Willie Jacquelyn Hunt.....	Box 513, Saltville, Va.
Wendell Webster Jones.....	201 Shepard St., Elizabeth City, N. C.
Helen Christeen Lennon.....	Rt. 2, Box 161, Chadbourne, N. C.
Cecilia Elizabeth Little.....	109 Franklin St., Addor, N. C.
Gloria Jean McCollum.....	273 Rickard St., Abingdon, Va.
Mary Malissa Marable.....	500 Boyd St., Greensboro, N. C.
Buelah Graham Mitchell.....	302 Currie St., Fayetteville, N. C.
Florence Katheryn Shirley Moore.....	5931 Summer St., Philadelphia, Pa.
Gloria T. Moss.....	309 Hall St., Franklin, Va.
Ollie Belle Norman.....	Box 172, Pisgah Forest, N. C.
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Norma Chavis Pennix.....	P. O. Box 411, Gibsonville, N. C.
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Dorothy Smith.....	810 Thomas St., Albemarle, N. C.
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**BACHELOR OF SCIENCE IN ARCHITECTURAL ENGINEERING**

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Kenneth Harold MacRae.....	1209 Wright St., Wilmington, N. C.
Owen Spencer McPherson.....	633 Pittman St., Waycross, Ga.
Daniel M. Wright.....	93 Congress St., Charleston, S. C.

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**BACHELOR OF SCIENCE IN INDUSTRIAL EDUCATION**

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 Chales Allen Chandler.....Buffalo Springs, Va.  
 Joseph Linwood Cooper.....19 Hastings Place, Hempstead, N. Y.  
 James Jonathan Davis.....1010 North St., Beaufort, S. C.  
 Lindy Dowtin.....1310 E. Market St., Greensboro, N. C.  
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 Nathaniel Rhodes Gardner.....949 E. Washington St., Greensboro, N. C.  
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 William Ray Johnson.....146 Badger Ave., Newark 8, N. J.  
 Clement Willie Jones.....11 Wallace Rd., Frogmore, S. C.  
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 Alexander Monroe.....1209 Fisher St., Morehead City, N. C.  
 Robert Lee Overby.....912 Douglas St., Greensboro, N. C.  
 Waddell Pearson.....459 W. Hampton Ave., Spartanburg, S. C.  
 James Edward Reese.....734 Pearson St., Greensboro, N. C.  
 Lonnie Edward Reynolds.....107 S. Obermeyer St., Greensboro, N. C.  
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 Joel Sadler.....2018 Hassell St., Greensboro, N. C.  
 Major B. Stringfield.....Rt. 1, Box 113, Willard, N. C.  
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Ilo Odessa Burris.....	Rt. 1, Box 1944, Kings Mountain, N. C.
Arthur Paul Burson.....	812 Fairview St., High Point, N. C.
Charles E. Cain.....	139 Lanning Ave., Penns Grove, N. J.
Berlena Campbell.....	Rt. 2, Box 161-B, Lillington, N. C.
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Edward Ashton Carter.....	Rt. 2, Brideton, N. J.
Christine Berlin Clark.....	308 W. First St., Greenville, N. C.
Charles Ervin Coffey.....	492 Billingsley Rd., Charlotte, N. C.
James Arthur Coleman.....	194 E. Hampton Ave., Spartanburg, S. C.
Ella Gertrue Corbett.....	Rt. 2, Box 26, Cedar Grove, N. G.
James Weldon Cox.....	Rt. 5, Box 319, Clinton, N. C.
Jerry Crawford.....	14 Elm Ct., Great Barrington, Mass.
Addie Mae Cummings.....	Rt. 1, Gibsonville, N. C.

Ressie Zelma Curry.....	1214 Gill St., Raleigh, N. C.
Archie Wilbur Dabney, Jr.....	107 Mike St., Leesburg, Fla.
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Dawson Charles Deese.....	10 Meadow Brook St., Pomona, N. C.
Saul Dula, Jr.....	Rt. 7, Box 21, Lenoir, N. C.
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Theola Farmer Ervin.....	Rt. 6, Box 215, Fayetteville, N. C.
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Marion Lorraine Flythe.....	P. O. Box 281, Conway, N. C.
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Dorena Freeman.....	503 Law St., Greensboro, N. C.
Rudolph Gadson.....	Rt. 1, Box 24, Maysville, N. C.
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Monnie Hester Glass.....	911 Durham Rd., Roxboro, N. C.
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Charles Houston Harden.....	Rt. 1, Staunton, Va.
Clarence Lee Hardison.....	Sneads Ferry, N. C.
Nancy Eldora Harrell.....	Murfreesboro, N. C.
Warren Stanley Harris.....	2317 Oak St., Portsmouth, Va.
Corina Headen.....	701 N. Fifth Ave., Siler City, N. C.
Frederick Heckstall.....	421 Middlesex St., Norfolk, Va.
Rudolph V. Hinnant.....	1301 Sloan St., Greensboro, N. C.
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Bernice Fisher James.....	1541 McConnell Rd., Greensboro, N. C.
Hattie Louis Jeffers.....	Blanche, N. C.
Raymond Erwin Jenkins.....	210 4th St., N. W., Moultrie, Ga.
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Ethel Jorinda Johnson.....	323 Buffalo St., Shelby, N. C.
James R. Johnson.....	1007 Pickard St., Greensboro, N. C.

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David Marshall Kithcart.....	70 Maple St., Gastonia, N.C.
Queenie Constance Lambert.....	1435 Bolton St., Norfolk, Va.
Frances Mercille Lancaster.....	Box 66, Farmville, Va.
Vernetta Louise Lee.....	2516 Chapel St., Norfolk, Va.
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William H. Lyle.....	Rt. 1, Fairfield, Va.
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Frank Charles Mahon.....	785 Home St., Bronx 56, N.Y.
Charlie Edward Mayo.....	130 W. Freemason St., Edenton, N.C.
Carolyn Amelia Mitchell.....	Chetnut Hill Rd., Wilton, Conn.
Millard Claude Mitchell.....	Rt. 2, Garysburg, N.C.
Edna Beatrice Montgomery.....	310½ Lookout St., Chattanooga, Tenn.
Cye Parker, Jr.....	333 W. Moore St., Rock Hill, S.C.
Frederick Parks.....	131 Mitchell St., Greensboro, N.C.
Cora Acesta Patillo.....	403 Hall St., Franklin, Va.
Delbert Samuel Payne.....	4914 Brown St., Philadelphia, Pa.
Grafton Samuel Payne, Jr.....	202 Dyce St., Charlottesville, Va.
Flossie Sybil Phelps.....	216 Johnson St., Roxboro, N.C.
Robert Sumner Poole, Jr.,	2718 Old Lexington Rd., Winston-Salem, N.C.
Stanley Coates Porter.....	5431 W. Minster Ave., Philadelphia, Pa.
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William Jasper Rice.....	917 E. Ninth St., Winston-Salem, N.C.
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Alvin Rucker.....	711 Illa St., Anderson, S.C.
Waved Ruffin, Jr.....	Star Rt., Windsor, N.C.
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Margaret Jennell Simmons.....	906 Julian St., Greensboro, N.C.
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James Norfleet Slade.....	125 W. Carteret St., Edenton, N.C.
William David Smart.....	84 Peak Avenue, Milford, Conn.
James Vanderbilt Smith.....	P. O. Box 78, Nicholas, Fla.
James Wesley Smith.....	130 Obermeyer St., Greensboro, N.C.
Sara Louisea Smith.....	Kings Mountain, N.C.
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Walter Rufus Stephens.....	1003 Woodard Ave., Wilson, N. C.
Sherwood Thompson.....	145 N. Hamilton St., Poughkeepsie, N. Y.
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Pearl T. Turner.....	120 N. Dudley St., Greensboro, N. C.
Ralph Stanley Turner.....	427 Spooner Ave., Plainfield, N. J.
Peggy Jean Waddell.....	605 Julian St., Greensboro, N. C.
Colonel Watson, Jr..	482 Liberty Ave., Donora, Pa.
Patricia Lee Watson.....	408 Leonora St., High Point, N. C.
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Abraham Lee Williams.....	704 McKoy St., Clinton, N. C.
Dorris Agnes Williams.....	Box 283, Welcome, Md.
Henry P. Williams.....	715 Prospect Ave., Bronx, N. Y.
James Ira Williams.....	4728 Reinhart St., Philadelphia, Pa.
Beatrice Marie Woodard.....	517 N. W. Eighth St., Gainesville, Fla.
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Bryant Wooten.....	Rt. 1, Box 59-A, Macclesfield, N. C.

#### MASTER OF SCIENCE

Norma O. Banks Christian, B.S., A. and T. College, 1950. Thesis: The Relationship Between the Intelligence Quotients of Twenty-five Eighth Grade Pupils and Their Scholastic Achievement.

Luella Evans Crosby, B.S., A. and T. College, 1941. Thesis: A Plan for Social Learning as Developed in the Third Grade at the Jacksonville Primary School.

Lugene Webber Davis, B.S., Winston-Salem Teachers College, 1939. Thesis: The Past and Present Status of the History of Negro Education in Caswell County, North Carolina, 1930-1951.

Bernice Archie Duckett, B.S., Winston-Salem Teachers College, 1944. Thesis: A Comparative Study of Programs for the Education of Gifted Children.

Ethel Evans Echols, B.S., Bennett College, 1942. Thesis: Some Methods and Procedures for Teaching Social Studies to the Fifth Grade at the Washington Street Grammar School, Greensboro, North Carolina.

Henry Blackwell Greene, B.S., Fayetteville State Teachers College, 1940. Thesis: Study of the Transportation of School Children in Brunswick County, North Carolina.

Josie McCoy Greene, B.S., A. and T. College, 1942. Thesis: A study of the Present Status of Business Courses in Negro High Schools of North Carolina.

Elsie J. Wilmer Hairston, B.S., A. and T. College, 1939. Thesis: A Survey of the Students of Church Street High School, Thomasville, North Carolina, Who Have Dropped Out During the Years, 1940-1950.

Elwood Jennings Jones, B.S., A. and T. College, 1942. Thesis: A Study of the Historical Development of Liberty High School, Liberty, North Carolina, from 1931 to 1951.

James Henry Jones, B.S., A. and T. College, 1932. Thesis: A Comparative Study of the Health and Physical Education Programs in the Freedman High School, Lenoir, North Carolina, and the Ridgeview High School, Hickory, North Carolina, and Operation of Their Programs in Correlation with the Evaluation Criteria of the Co-operative Study of Secondary Schools Standards.

Juanita Iris Jones, A.B., St. Augustine's College, 1942. Thesis: The Life and Works of Susan B. Dudley.

Mernell Graves London, B.S., A. and T. College, 1933. Thesis: An Evaluation of the Writings of the Students in Ninth Through the Twelfth Grades at Jordan Sellars High School at Burlington, North Carolina.

Hector Royster McKethan, B.S., A. and T. College, 1929. Thesis: An Attempt of the Dudley Elementary School of Dudley, North Carolina, to Solve the Inter-Racial Problem of Its Community.

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## ENROLLMENT BY COUNTIES IN NORTH CAROLINA

Alamance .....	87	Iredell .....	19
Alexander .....	4	Jackson .....	3
Anson .....	18	Johnston .....	24
Beaufort .....	34	Jones .....	27
Bertie .....	20	Lee .....	13
Bladen .....	29	Lenoir .....	17
Brunswick .....	3	Martin .....	12
Buncombe .....	23	Mecklenburg .....	51
Burke .....	6	Montgomery .....	9
Cabarrus .....	11	Moore .....	17
Caldwell .....	7	Nash .....	16
Camden .....	2	New Hanover .....	27
Carteret .....	6	Northhampton .....	20
Caswell .....	19	Onslow .....	7
Catawba .....	11	Orange .....	22
Chatham .....	26	Pasquotank .....	6
Chowan .....	12	Pender .....	19
Cleveland .....	34	Perquimans .....	2
Columbus .....	27	Person .....	22
Craven .....	17	Pitt .....	57
Cumberland .....	27	Polk .....	3
Currituck .....	2	Randolph .....	13
Dare .....	1	Richmond .....	26
Davidson .....	15	Robeson .....	42
Davie .....	5	Rockingham .....	24
Duplin .....	42	Rowan .....	15
Durham .....	30	Rutherford .....	10
Edgecombe .....	32	Sampson .....	30
Forsyth .....	98	Scotland .....	25
Franklin .....	21	Stanly .....	7
Gaston .....	22	Stokes .....	4
Gates .....	2	Surry .....	9
Granville .....	39	Tyrell .....	6
Greene .....	15	Union .....	11
Guilford .....	395	Vance .....	26
Halifax .....	65	Wake .....	66
Harnett .....	11	Warren .....	27
Haywood .....	1	Wayne .....	66
Henderson .....	5	Washington .....	3
Hertford .....	24	Wilkes .....	7
Hoke .....	10	Wilson .....	29
Hyde .....	1	Yadkin .....	3

## ENROLLMENT BY STATES

1952-1953

Alabama .....	22
Connecticut .....	7
District of Columbia .....	19
Florida .....	73
Georgia .....	54
Illinois .....	5
Indiana .....	1
Kentucky .....	1
Maryland .....	13
Massachusetts .....	3
Michigan .....	1
Mississippi .....	1
New Jersey .....	21
New York .....	36
North Carolina .....	2,102
Ohio .....	19
Pennsylvania .....	22
South Carolina .....	161
Tennessee .....	4
Virginia .....	238
West Virginia .....	2
Wisconsin .....	2
British West Indies .....	4
Puerto Rico .....	1
West Africa .....	1
Liberia .....	1
Total .....	2,818

## SUMMARY OF ENROLLMENT

1952-1953

Senior Class .....	417
Junior Class .....	387
Sophomore Class .....	579
Freshman Class .....	903
Special Students .....	14
Graduate Students .....	301
Trade Students .....	217
Total.....	2,818

Total Enrollment, excluding duplicates,

Fall Session, 1952-53 .....	2,818
Summer Quarter, Undergraduates, 1952 .....	924
Summer Quarter, Graduate Students .....	620
Grand Total, 1952-53 .....	4,362

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